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ABSTRACT

This report identifies programs that have proven to be effective and programs that show potential for improving academic achievement among Latino youth in the elementary and middle grades. It targets programs specifically designed for this population and programs that have worked for all children and that have been disseminated for use with Latino children. A search of the ERIC network, a review of National Diffusion Network validated programs, and a review of programs receiving Title VII Academic Excellence awards provided information about program effectiveness. The types of programs include schoolwide reform programs, curriculum-specific programs, cooperative learning methods, and tutorial programs. Criteria for inclusion included evidence of effectiveness, replicability, and evaluation or application with Latino students. Factors that contribute to program effectiveness have been identified as: (1) clear goals that emphasize methods and materials linked to those goals and programs that assess progress toward those goals; (2) well-specified components, materials, and professional development materials; (3) extensive professional development; and (4) dissemination by organizations that focus on the quality of implementation. An appendix lists contacts for information on the 40 programs reviewed. (Contains 180 references.) (SLD)

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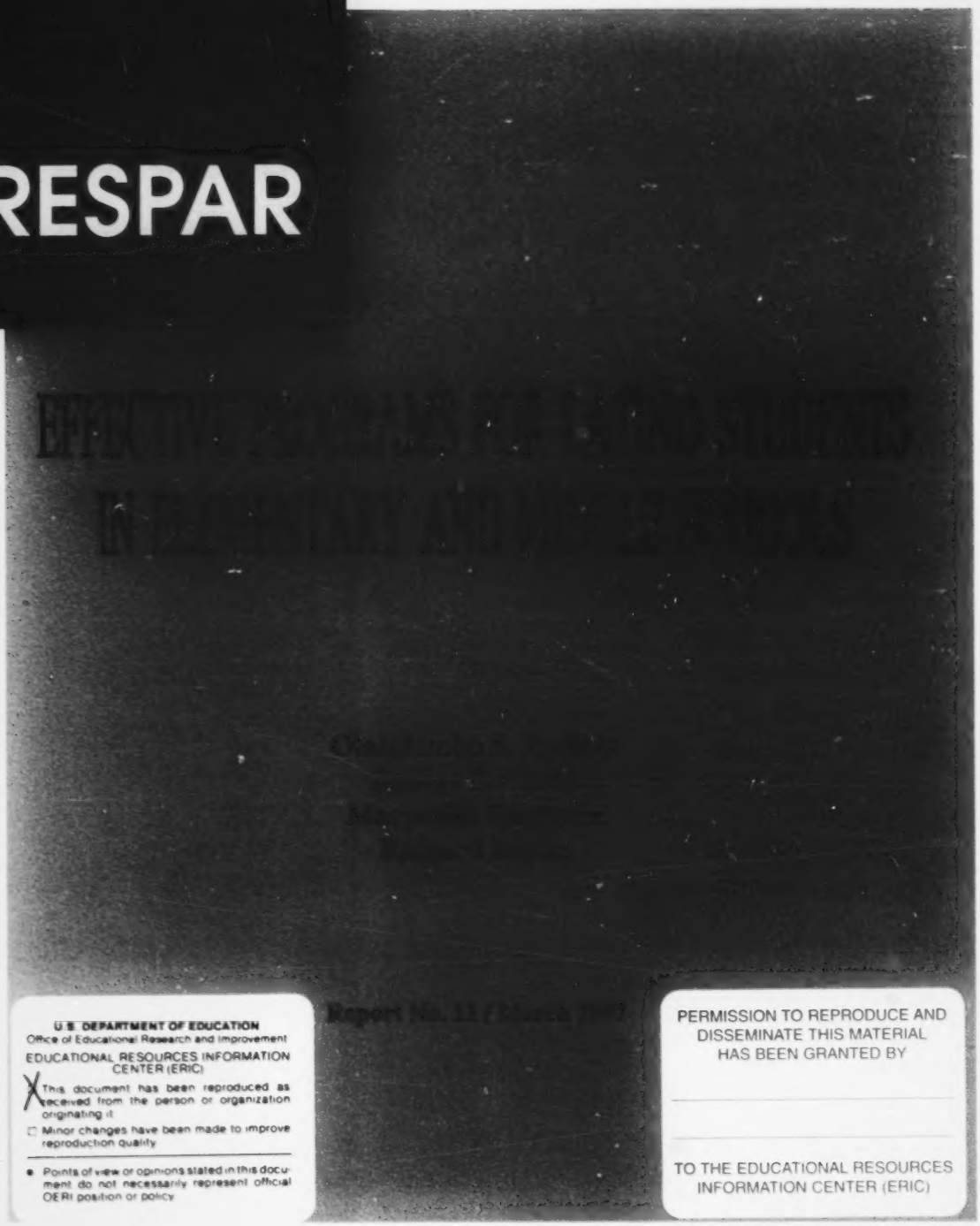

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EFFECTIVE PROGRAMS FOR LATINO STUDENTS IN ELEMENTARY AND MIDDLE SCHOOLS

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The Center

Every child has the capacity to succeed in school and in life. Yet far too many children, especially those from poor and minority families, are placed at risk by school practices that are based on a sorting paradigm in which some students receive high-expectations instruction while the rest are relegated to lower quality education and lower quality futures. The sorting perspective must be replaced by a "talent development" model that asserts that all children are capable of succeeding in a rich and demanding curriculum with appropriate assistance and support.

The mission of the Center for Research on the Education of Students Placed at Risk (CRESPAR) is to conduct the research, development, evaluation, and dissemination needed to transform schooling for students placed at risk. The work of the Center is guided by three central themes — ensuring the success of all students at key development points, building on students' personal and cultural assets, and scaling up effective programs — and conducted through seven research and development programs and a program of institutional activities.

CRESPAR is organized as a partnership of Johns Hopkins University and Howard University, in collaboration with researchers at the University of California at Santa Barbara, University of California at Los Angeles, University of Chicago, Manpower Research Demonstration Corporation, WestEd Regional Laboratory, University of Memphis, and University of Houston-Clear Lake.

CRESPAR is supported by the National Institute on the Education of At-Risk Students (At-Risk Institute), one of five institutes created by the Educational Research, Development, Dissemination and Improvement Act of 1994 and located within the Office of Educational Research and Improvement (OERI) at the U.S. Department of Education. The At-Risk Institute supports a range of research and development activities designed to improve the education of students at risk of educational failure because of limited English proficiency, poverty, race, geographic location, or economic disadvantage.

Abstract

This report identifies programs that have proven to be effective and programs that show potential for improving academic achievement among Latino youth in the elementary and middle grades.

This report targets not only programs specifically designed for this population, but also programs that have worked with other children and that have been disseminated with Latino children. In addition to a large ERIC search, National Diffusion Network validated programs and Title VII Academic Excellence Award programs were contacted for their evidence of effectiveness.

Types of programs reviewed include schoolwide reform programs such as Accelerated Schools, School Development Program, Success for All, and Consistency Management and Cooperative Discipline; curriculum specific programs such as QUASAR, Cognitively Guided Curriculum, Project SEED, Program Approach to Writing, and Math in Context; cooperative learning methods such as BCIRC, Complex Instruction/Finding Out/Descubrimiento, STAD, TGT, and Jigsaw; and tutorial programs such as Reading Recovery, Descubriendo La Lectura, and HOSTS.

Criteria for inclusion included evidence of effectiveness, replicability, and evaluation or application with Latino students.

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Introduction

Education has always been the means by which children of immigrants to the United States enter the economic mainstream of our society. As a nation of immigrants, we have always taken pride in the idea (if not the reality) that our schools should give children from all cultures and backgrounds a fair chance to succeed in school and thereby in society.

In recent years, however, many have begun to question the effectiveness of schools for children from non-mainstream cultures. In particular, there is great concern about the education of children from families that originated in Latin America. Latino (or Hispanic) children are one of the fastest-growing groups in our schools. In 1973 they represented less than six percent of all public school children; by 1993 they were almost twelve percent of all students (NCES, 1995). While other immigrant groups have also experienced substantial increases, Latino students are by far the largest group in absolute numbers.

Of course, Latino students are highly diverse; it is inappropriate to make generalizations about students from Mexican, Puerto Rican, Cuban, or South American backgrounds, those whose families have been in the U.S. for hundreds of years and those whose families arrived a month ago, those who have entered the growing Latino middle class and those who are struggling in poverty, and so on. For example, Mexican American and Central American children drop out at almost three times the rate of Cuban American and South American children, who are near the national average dropout rate (GAO, 1994). Nevertheless, it is worthwhile to consider the characteristics of Latino students as a whole.

On average, Latino students perform much worse in elementary and secondary school than Anglo students on measures of academic achievement and other measures of academic success. On the National Assessment of Educational Progress (NAEP, 1994), Latino students have been gradually increasing their scores over the past two decades, especially in reading, and have significantly reduced the gap between their performance and that of Anglos (NCES 1994), although the gap grew somewhat over the 1991-1994 period. However, the average performance of Latino students remains significantly below that of Anglos at all grade levels and in all subjects tested. For example, Latino students are about two years below Anglos in reading at age 13. In science, the average Latino thirteen-year-old scores at about the level of Anglo nine-year-olds.

The dropout rate among Latino students is extremely high. In 1991, approximately 35.3% of Latinos ages 16-24 were out of school without a high school degree, compared to 8.9% of Anglos and 13.6% of African Americans (NCES, 1993). The comparison with African

American dropout rates is particularly telling: Latino students' academic performance and socioeconomic status are similar to those of African Americans, but their dropout rate is two-and-a-half times higher. Worse, while dropout rates have been falling for Anglo and African American students, they have been rising since the early 1980s for Latino students. Part of this relates to increasing immigration rates; dropout rates are especially high among Latinos born outside of the United States (43%). However, even among U.S.-born Latinos in the second generation or beyond, dropout rates averaged 24%, still far higher than that for Anglos and almost twice that for African Americans. In fact, second generation Latinos' dropout rate is higher than that of first generation native-born Latinos (17%).

Latino students face two major barriers to educational success: low socioeconomic status and language. By any measure, Latino students are far more likely than Anglo students to come from homes in poverty and to have parents who have limited education. Forty percent of Latino children are living in poverty, almost twice the rate for all U.S. children (NCES, 1995). Latino students from low-income families perform less well and are far more likely to drop out than are those from middle- or upper-income families (Knapp & Woolverton, 1995), but even within income categories, Latino students are much more likely to drop out than are other students. Middle-income Latino students, for example, are almost three times more likely to drop out than middle-income white or African American students, and they are about as likely to drop out as *low*-income African American students (NCES, 1993).

Clearly, low socioeconomic status does not explain the educational difficulties of Latino students. A second key factor is language. Of an estimated 2.3 million limited English proficient students in grades K-12, about 75% speak Spanish (Fleishman & Hopstock, 1993; U.S. Department of Education, 1992). Limited English proficient students of all nationalities perform significantly lower than fully English proficient students (CCSSO, 1990; Durán, 1994). Further, about half of all limited English proficient students were born outside of the United States, and immigrant status (highly correlated with language) is a key predictor of school success (General Accounting Office, 1994).

Clearly, there is a crisis in the education of Latino students, and this crisis is not fully explained by recent immigration status or even limited English proficiency, as second-generation Latinos are likely to be proficient in English. There are many islands of excellence among schools serving many Latino children, but far too many of these children are placed at risk by schools and community institutions unable to build on the cultural, personal, and linguistic strengths these children are likely to bring with them to school (Vasquez, 1993).

Beyond Language of Instruction

Discussion of appropriate education for Latino students has focused for many years on the question of the appropriate language of instruction for limited English proficient students. Research on this topic has generally found that limited English proficient, Spanish-dominant students who are taught to read Spanish and then transitioned to English ultimately become better readers in English than do students taught to read only in English (Garcia, 1991; Willig, 1985; Wong-Fillmore & Valdez, 1986). An influential study by Ramirez, Yuen, and Ramey (1991) added to this conclusion a caution about bilingual programs that transition students to English-only instruction too early or too abruptly — such programs produced results no better than those produced by English immersion strategies.

The debate about language of instruction for limited English proficient students is sure to continue, and this question does play an important role in considerations of effective instruction for Latino students in general. However, more recently, attention has shifted to another question. How can we ensure that students will succeed in school, whichever language is used to teach them? (See for example, Garcia, 1994.) If Spanish-dominant students are taught in Spanish, they must succeed in Spanish. There is no reason to believe that children failing to read well in Spanish will later become good readers and successful students in English. On the contrary, research consistently supports the common-sense expectation that the better students in Spanish bilingual programs read Spanish, the better their English reading will be (Garcia, 1991; Hakuta & Garcia, 1989). Clearly, the quality of instruction in Spanish is a key factor in the success of students in bilingual programs, and must be a focus of research and professional development in the education of these children.

Further, it is important to note that most Latino students are taught in English. The majority are fully proficient in English when they enter school, and among those who are not, only about half participate in bilingual programs, due to such factors as local policies against native-language instruction, shortages of fully bilingual teachers, parental preferences for English-only instruction, lack of adequate concentrations of limited English proficient students in a given school to justify a bilingual program, or other factors. In addition, even in schools with bilingual programs, Spanish instruction is typically given only in some subjects and only for a few years. For these reasons, a large proportion of Latino students will always be taught most or all subjects entirely in English (with English as a second language [ESL] instruction as a supplement for students who need it). As is true of bilingual education, the quality of classroom instruction, ESL instruction, and the integration of the two are essential in determining the success of Latino students.

Without minimizing the importance of the debate over language of instruction, it is time to move beyond this debate, to ask what instructional programs are most effective for Latino students regardless of their language proficiency and regardless of availability of native-language instruction.

The purpose of this report is to present research on the effectiveness of instructional programs for Latino students in the elementary and middle grades (K-8). This is a critical period in students' development. Although dropout usually takes place during the secondary years, the processes that lead to dropout begin much earlier. Low achievement, retention in grade, and other school success indicators as early as third grade can predict high school dropout with a high degree of reliability (Lloyd, 1978; Rumberger, 1987; Ekstrom, Goertz, Pollack, & Rock, 1986).

Further, for many students, intervention in high school is too late. Census data cited by Rumberger (1995) show that almost half of Latino males who dropped out of school did so before they completed their first year of high school. During elementary and middle school, students largely define themselves as learners. Failure in the early grades ultimately leads to low academic self-esteem, frustration, truancy, delinquency, and dropout (Finn, 1989).

Focus of the Review

The focus of this review is on the identification of programs that have been shown to be effective in rigorous evaluations, that are replicable across a broad range of elementary and middle schools, and that have been successfully evaluated or at least frequently applied to schools serving many Latino students. There are many articles and books on the general principles of effective practice for Latino students and for bilingual education (e.g., Council of Chief State School Officers, 1990; Durán, 1994a, b; Vasquez, 1993; Milk, 1993; Losey 1995; Howe, 1994; Leighton, Hightower, & Wrigley, 1995) and descriptions of outstanding schools for Latino or bilingual students (e.g., Fleischman & Hopstock, 1993; Jiménez, García, & Pearson, 1995; Gutierrez, Larson, & Kreuter, 1996). The reader is encouraged to seek out these and other writings on effective practices. However, the focus of this review is on specific strategies that schools could select to improve achievement outcomes for Latino students. Other compendia list promising programs (e.g., Leighton et al., 1995; National Diffusion Network, 1995), but unlike these, this review applies consistent standards to evaluate the likely effectiveness and replicability of programs available to educators committed to transforming schools and classrooms to meet the needs of Latino students.

The criteria applied in this review are described in the following sections.

1. Effectiveness

Programs were considered to be effective if evaluations compared students who participated in the program to similar students in matched comparison or control schools and found the program students to perform significantly better on fair measures of academic performance. Such evaluations were required to demonstrate that experimental and control students were initially equivalent on measures of academic performance, language proficiency, and other measures, and were similar in other ways. "Fair measures" were ones assessing objectives pursued equally by experimental and control groups; for example, a curriculum-specific measure would be fair only if the control group were implementing the same curriculum.

Many studies of innovative programs used evaluations that compared gains made by program students on standardized tests, usually expressed in percentiles or normal curve equivalents (NCEs), to "expected" gains derived from national norming samples. This design, widely used in evaluations of Chapter 1/Title I and Chapter VII/Title VII programs, is prone to error and generally overstates program impacts (Slavin & Madden, 1991). In studies of limited English proficient students that use standardized tests in English, this design is particularly prone to error, as low pretests among LEP students are likely to be due to lack of English language skills, not lack of content knowledge. As students learn English they are likely to appear to make more rapid progress than an English-proficient norming group. Programs evaluated using NCE gains or other alternatives to experimental-control comparisons are discussed as promising if their outcomes are particularly striking, but such data are not considered conclusive.

In this review, we exclude after-the-fact comparisons of experimental and control groups chosen after outcomes are known.

2. Replicability

The best evidence that a program is replicable in other schools is that it has in fact been replicated elsewhere, especially if there is evidence that the program was evaluated and found to be effective in sites beyond its initial pilot locations. The existence of an active dissemination effort, as would be true of most developer/demonstrator projects funded by the National Diffusion Network (NDN) or most Title VII projects, is also a strong indication of replicability. Programs are considered low in replicability if they have been used in a small number of schools and appear to depend on conditions (e.g., charismatic principals, magnet schools, extraordinary resources) unlikely to exist on a significant scale elsewhere.

3. Evaluation or Application with Latino Students

Ideally, the programs emphasized in this review are ones that have been successfully evaluated in schools serving many Latino students. However, it would be foolish to exclude programs known to be effective with non-Latino populations if they have promise for Latino students. Therefore, programs were included if they had strong evidence of effectiveness and replicability and had been disseminated to schools with many Latino students, even if the reported evaluations did not include Latino students.

Literature Search Procedures

The broadest possible search was carried out for programs that had been evaluated and/or applied to Latino students. In addition to searches of the Education Resource and Information Center (ERIC) system and of education journals, we obtained reports on promising programs listed by the National Diffusion Network (NDN) and by Title VII grantees. The NDN was a part of the U.S. Department of Education that identified promising programs, disseminated information about them through a system of state facilitators, and provided "developer/demonstrator" grants to help developers prepare their products for dissemination and then to carry out a dissemination plan. To be listed by NDN a program must have presented evidence of effectiveness to a Program Effectiveness Panel (PEP), or formerly to the Joint Dissemination Review Panel (JDRP). PEP or JDRP panel members reviewed the data for educationally significant effects. However, the evaluation requirements for PEP/JDRP have been low, and more than 500 programs of all kinds have been approved, mostly on the basis of NCE-gain designs.

The Title VII Academic Excellence program is a national dissemination program for exemplary bilingual and ESL programs, and is funded by the U.S. Department of Education's Office of Bilingual Education and Minority Affairs (OBEMLA). The Title VII Academic Excellence award winners are initially evaluated regionally, then statewide, and finally by the OBEMLA office evaluation team. Programs that have proven to be effective and are deemed to be transportable and easily implemented in a wide variety of educational settings are then selected to represent the state at national Academic Excellence competitions. If they win, they are selected to be Title VII Academic Excellence programs. The projects provide materials, training, teacher mentoring, and follow-up assistance. This year, 18 such programs were identified. We examined project descriptions and evaluation evidence for all of the selected Title VII Academic Excellence programs.

Selection for Review

Ideally, programs emphasized in this review would be those that were specifically designed for use with Latino students, present rigorous evaluation evidence in comparison to control groups showing significant and lasting impacts on the achievement of Latino students, and have active dissemination programs that have implemented the program in many schools serving Latino students and have evidence of effectiveness in dissemination sites, ideally from studies conducted by third parties. To require all of these conditions would limit this review to two programs, our own Success for All/*Lee Conmigo* program and the Spanish adaptation of Reading Recovery, *Descubriendo La Lectura*. To include a much broader range of programs, we have had to compromise on one or more criteria. For example, we have included programs that have excellent data that show positive effects for Latino students even if the program has not been widely replicated (as long as there is no obvious reason it could not be replicated). We have included programs that have excellent outcome data and evidence of replicability with non-Latino students if the program has been replicated in areas with large Latino populations. We have included programs that have shakier evidence of effectiveness if they are particularly well-known, widely replicated, and appropriate to the needs of Latino students. Thus, our listing of a program in this review does not mean that we believe the program to be highly effective, replicable, and uniquely adapted to the needs of Latino students. Instead, among the hundreds of programs we have reviewed, these were the ones we felt to be most appropriate to be considered by elementary and middle schools serving many Latino students. We have tried to present the evidence that school and district staff would need to begin a process leading to an informed choice from among effective and promising programs capable of being replicated.

Effect Sizes

The outcomes of the evaluations summarized in this review are quantified as "effect sizes." These are computed as the difference between experimental and control group means divided by the control group's standard deviation (Glass, McGaw, & Smith, 1991). To give a sense of scale, an effect size of +1.0 would be equivalent to 100 points on the SAT scale, two stanines, 15 points of IQ, or about 21 NCEs. In general, an effect size of +.25 or more would be considered educationally significant. When means and standard deviations are not known, they can usually be estimated from t-tests, Fs, chi squares, or exact p values. If effect sizes cannot be computed, study outcomes are still included if they meet all other inclusion criteria. Because of differences between measures, experimental designs, and other factors, effect sizes should be interpreted with caution. For example, effect sizes are almost always higher on

experimenter-made tests closely aligned with program curricula than on more general standardized tests (Rosenshine & Meister, 1994). However, effect sizes do provide a useful indication of programs' effects on student achievement that can be compared (with caution) across studies and programs.

Schoolwide Reform Programs

Some of the most promising programs for Latino students are programs designed to reform the entire school, touching on everything from curriculum and instruction to school organization and assessment. Most of these are adaptations or applications of national programs not originally designed for Latino or LEP students but modified or redesigned for this purpose in schools with many such children.

Success for All/*Lee Conmigo*

The schoolwide reform program that has been most extensively evaluated in schools serving many Latino students is Success for All, a comprehensive reform program for elementary schools serving many children placed at risk (Slavin, Madden, Dolan, & Wasik, 1996a). Success for All provides schools with innovative curricula and instructional methods in reading, writing, and language arts from kindergarten to grade six, with extensive professional development. The curriculum emphasizes a balance between phonics and meaning in beginning reading and extensive use of cooperative learning throughout the grades. Recently, programs in mathematics, social studies, and science have been added to Success for All, making up a program called Roots and Wings (Slavin, Madden, Dolan, & Wasik, 1996a).

One-to-one tutoring, usually from certified teachers, is provided to children who are having difficulties in learning to read, with an emphasis on first graders. Family support services provided in each school build positive home-school relations and solve problems such as truancy, behavior problems, or needs for eyeglasses or health services. A program facilitator works with all teachers on continuing professional development and coaching, manages an assessment program to keep track of student progress, and ensures close coordination among all program components.

In schools with Spanish bilingual programs, Success for All uses a beginning reading curriculum called *Lee Conmigo*, which applies instructional strategies similar to those used in the English program (Reading Roots), but uses a curriculum sequence and materials appropriate to Spanish language and Latino culture. Beginning in late first grade, students use

an adaptation of Bilingual Cooperative Integrated Reading and Composition (BCIRC), described later in this report. BCIRC uses Spanish novels or basals in a comprehensive cooperative learning approach to reading, writing, and language arts. BCIRC also uses cooperative learning activities to help students transition from Spanish to English reading at the point of transition mandated by district policies.

A different adaptation of Success for All is made in schools with many limited English proficient students but no native-language instruction. In these schools, the English curriculum is used, but there is a close coordination between ESL and classroom reading programs to infuse effective ESL strategies into the reading approach. ESL teachers usually provide classroom reading instruction and, often, tutoring to LEP children.

Research on the Success for All program in general has taken place in 23 schools in nine districts throughout the United States. In each case Success for All schools were matched with similar comparison schools. Students were pretested to establish comparability and then individually posttested each year on scales from the Woodcock Reading Mastery Test and the Durrell Oral Reading Test. Results show consistent, substantial positive effects of the program, averaging an effect size of about +.50 at each grade level. For the most at-risk students, those in the lowest 25% of their grades, effect sizes have averaged more than a full standard deviation (ES=+1.00 or more). In grade equivalent terms, differences between Success for All and control students have averaged three months in the first grade, increasing to more than a full grade equivalent by fifth grade (Slavin, Madden, Dolan, & Wasik, 1996b). Follow-up studies have found that this difference maintains into sixth and seventh grades, after students have left the program schools.

For Latino students, the effects of Success for All have been particularly positive (Slavin & Madden, 1995). Bilingual schools using *Lee Conmigo* in Philadelphia found substantial differences between Success for All and control schools on scales from the Spanish Woodcock, with an effect size at the end of second grade of +1.81 (almost a full grade equivalent different). A study in two California bilingual schools (Dianda & Flaherty, 1995) also found very positive effects of Success for All/*Lee Conmigo*. At the end of first grade, Success for All students exceeded control students by an effect size of +1.03, or about five months. Dianda and Flaherty (1995) also reported an effect size of +1.02 for Spanish-dominant LEP students in a sheltered English adaptation of Success for All in a third California school. Incidentally, a five-year study of the ESL adaptation of Success for All to limited English proficient Cambodian students in Philadelphia also found extremely positive outcomes, averaging an effect size of +1.44 and a grade equivalent difference of almost three years by the end of fifth grade (Slavin & Madden, 1995).

As of Fall 1996, Success for All is in use in more than 450 schools in the United States, of which more than 150 have significant numbers of Latino students. In Houston, Success for All is being implemented in 70 schools, and English and Spanish outcomes will be assessed in comparison to control schools in 35 bilingual schools. A training staff in Baltimore, with regional training programs focusing on bilingual and ESL issues in California, Texas, Arizona, Florida, and New York, disseminates the program nationally.

Accelerated Schools

Accelerated Schools (Levin, 1987; Hopfenberg & Levin, 1993) is an approach to school reform built around three central principles. One is *unity of purpose*, a common vision of what the school should become, agreed to and worked toward by all school staff, parents, students, and community. A second is *empowerment coupled with responsibility*, which means that staff, parents, and students find their own way to transform themselves, with freedom to experiment but also a responsibility to carry out their decisions. *Building on strengths* means identifying the strengths of students, of staff, and of the school as an organization, and then using these as a basis for reform. One of the key ideas behind Accelerated Schools is that rather than remediating students' deficits, students who are placed at risk of school failure must be accelerated, given the kind of high-expectations curriculum typical of programs for gifted and talented students.

The school implements these principles by establishing a set of "cadres" which include a steering committee and work groups focused on particular areas of reform. The program has no specific instructional approaches and provides no curriculum material; instead, school staff are encouraged to search for methods that help them realize their vision. However, there is an emphasis both on reducing all uses of remedial activities and on adopting constructivist, engaging teaching strategies (such as project-based learning).

Accelerated Schools began in schools near its home at Stanford University, and from the outset has been used in many schools serving Latino students.

The evaluation evidence on Accelerated Schools is quite limited and largely anecdotal. The program's developers state that the program takes five years to fully implement and that it is unfair to evaluate program outcomes until that much time has passed. No evaluation evidence has yet been reported from schools in the program this long. However, data from a few individual schools earlier in their implementations have been reported.

There have been three evaluations of individual Accelerated Schools, all including significant numbers of Latino students (but none separately reporting results for these

students). McCarthy and Still (1993) reported on one Texas school with a large Latino majority that showed gains over time in its fifth-grade standardized test scores (other grades were not mentioned). A similar comparison school showed losses over the same period.

Another Texas evaluation of Accelerated Schools was reported by Knight and Stallings (1995). This study compared a school with a 25% Latino population to a matched comparison school over a two-year period. On standardized tests in reading the Accelerated School students gained more than the comparison students in grades 1-3, but not 4-5. In language, the Accelerated School scored better in grades 1-2, but the control schools did as well or better in 3-5. On a statewide accountability test, Accelerated School students passed at a higher rate than comparison students on math and reading tests in grade 3, but the opposite was true in grade 5. On a writing measure students in the Accelerated School performed slightly higher at both grade levels.

In a Sacramento school with students speaking 13 languages, Chasin and Levin (1995) reported gains on standardized tests for sixth graders but did not mention changes in other grades. These gains are difficult to attribute to the program, as the school's population also increased substantially over the same period.

More than 700 schools in 37 states are currently involved in the Accelerated Schools network, and there are four regional training sites for the program in addition to the original training site at Stanford.

School Development Program

The School Development Program (SDP) (Comer, 1980, 1988) is a comprehensive approach to school reform in elementary and middle schools. The program's focus is on building a sense of common purpose among school staff, parents, and community, and engaging school staff and others in a planning process intended to change school practices to improve student outcomes.

Each SDP school creates three teams that take particular responsibility for moving the reform agenda forward. A School Planning and Management Team, made up of representatives of teachers, parents, and administration, develops and monitors implementation of a comprehensive school improvement plan. A Mental Health Team, principally composed of school staff concerned with mental health such as school psychologists, social workers, counselors, and selected teachers, plans programs focusing on prevention, building positive child development, positive interpersonal relations, and so on.

The third major component of the SDP is a Parent Program, designed to build a sense of community among school staff, parents, and students. The Parent Program incorporates existing parent participation activities (such as the PTA) and implements further activities to draw parents into the school, to increase opportunities for parents to provide volunteer services, and to design ways for the school to respect and celebrate the ethnic backgrounds of its students.

The three teams in SDP schools work together to create comprehensive plans for school reform. The main focus is on mental health and parent involvement, but schools are also encouraged to examine their instructional programs and to look for ways to serve children's academic needs more effectively.

The SDP was originally designed especially to meet the needs of African American children and families, but large numbers of Latino students also attend SDP schools, especially in California and Texas.

Evaluations of the effects of SDP have taken place in a number of locations. The first was a longitudinal evaluation of the first two SDP schools in New Haven, Connecticut, which showed marked improvements in student performance on standardized tests over a 14-year period (Comer, 1988). A recent independent evaluation following first graders in two SDP schools also showed positive effects (Stringfield & Herman, 1995). Other evaluations comparing SDP to matched control schools have found mixed, inconsistent effects, with substantial site-to-site variation. Outcomes emphasized by the program, such as self-concept and school climate, have been more consistently associated with the program than have achievement gains (Becker & Hedges, 1992; Haynes, 1991, 1994). Formal research on the SDP has not taken place in districts with significant Latino populations, but documentation of achievement gains over time is being gathered in San Diego, California, Dallas, Texas, and Dade County, Florida schools that serve many Latino students.

The SDP is currently involved with more than 565 schools, mostly elementary and middle, in 22 states. It has regional training programs in several states.

Consistency Management & Cooperative Discipline/ Disciplina Consistente y Cooperativa

Consistency Management & Cooperative Discipline (CMCD) (Freiberg, Prokosch, & Treister, 1990) is a schoolwide reform program designed to improve discipline in inner-city schools at grade levels K-6, to provide an appropriate environment for learning and improve academic achievement. CMCD emphasizes shared responsibility for classroom discipline

between students and teachers, turning classrooms into communities of ownership, where the teachers and students together make the rules for classroom management. The idea is that if students have a hand in creating and enforcing the rules, then acting-up to defy the teacher would not work anymore, "because (students) would also be breaking their own laws" (Freiberg, Prokosch, & Treister, 1990).

CMCD exists as a stand-alone program, or can be used along with other innovative programs directed at improving curriculum and instruction. Teachers initially assess the needs of their classrooms in the spring. During the summer, they attend various workshops on CMCD, and also work with facilitators from their own schools. During the school year, teachers return for workshops and follow-up sessions.

CMCD provides a framework of regulations, which schools adapt to fit their needs. The main components or themes of CMCD that exist at every school are prevention, caring, cooperation, organization, and community. At the initial implementation stages of CMCD, the teachers engage in a series of interviews and assessment sessions, whose goals are to evaluate the school's strengths and weaknesses and adapt the program to fit their school.

Although CMCD was not originally specifically designed for Latino children, it has primarily been evaluated in inner-city schools in Houston that serve Latino students and have many bilingual classes (Freiberg, Stein, & Huang, 1995). Other participants were predominantly African American. The main evaluation of CMCD followed five CMCD and five matched control schools in Houston over a period of five years. Two of the CMCD schools and three control schools had significant proportions of Latino students. Eighty-three percent qualified for reduced lunches. Discipline problems and mobility rates were high.

The first study (Freiberg, Prokosch, & Treister, 1990) was an evaluation of the five schools after the first two years of implementation. This study showed that the students of teachers from the five program schools who had attended at least seven sessions of CMCD outperformed students in the comparison schools, with minimal effect sizes ranging from +.09 to +.29 on the Metropolitan Achievement Test (MAT-6).

The second evaluation involved the comparison of one of the CMCD schools with its control school (Freiberg, Stein, & Huang, 1995). Although both schools had equal scores on the ITBS composite pretest, the experimental group outperformed the control group on the composite MAT-6 for the next three years, with effect sizes ranging from +.44 to +.95. The treatment group outscored the comparison group in math (ES=+.15), reading (ES=+.52), and writing (ES=+.84). CMCD students also exceeded control students on the Texas Educational Assessment of Minimal Skills (TEAMS), with effect sizes ranging from +.40 to +1.24 in math,

from +.13 to +.40 in reading, and from +.14 to +.45 in writing. Measures of motivation, self-concept, and other measurements of positive attitudes toward school and learning also favored the CMCD school.

Freiberg & Huang (1994) followed an initial cohort of students who entered before the first year the program was implemented (1985-86) and stayed in their respective schools until they reached the sixth grade (1991-92). Students who later attended the school, students of teachers who were trained at times other than the initial year of implementation, students who did not have scores from all tests (TEAMS and MAT-6) for all five years, and students who were retained at least a year were not included. Because of these restrictions and the high mobility rates, the final number of students who were followed for all six years was very small: 27 for the control school and 27 for the experimental school.

Students who had remained in the CMCD program for six years showed significantly higher test scores on TEAMS. Adjusting for pretest differences, effect sizes for the differences between the two groups ranged from +.08 to +.99. The students in the program schools also scored consistently higher than the students in the comparison schools on the MAT-6. Students involved in CDMC scored above the 50th percentile on the MAT-6 during all of the years they were assessed, while the scores of students in the comparison group dropped. Adjusting for pretest differences, effect sizes ranged from +1.13 to +1.23 in reading, +1.44 to +1.51 in math, and +.99 to +1.71 in writing.

The most recent study of CMCD (Freiberg, 1996) compared the performances of students in schools implementing a mathematics program with those in schools implementing a combination of CMCD and the mathematics program. All of the schools involved in this study were majority Latino. The students in the combined program outperformed students involved in the mathematics only program, with an effect size of +.33.

CMCD currently exists in over twenty-five schools in three Texas districts, as well as abroad. A Spanish component of CMCD called Disciplina Consistente y Cooperativa (DC) has been added that is designed specifically for Spanish-speaking English language learners and their families.

Goldenberg & Sullivan

The goal of Goldenberg and Sullivan's (1995) program is to prepare teachers and principals for school reform by making them active participants in reform efforts before and after the reform movement has begun in the school. Goldenberg and Sullivan (1995) state that unless teachers feel as though they are a part of the reform planning process, they are likely to

feel overwhelmed and ineffective when students do not show positive changes in academic achievement. They stipulate that in order to achieve both positive attitudes and better academic performance, both administrative and curricular issues must be addressed directly. Progress on four factors is needed: goals that are set and shared, indicators that measure success, assistance by capable others, and leadership that supports and pressures. When these goals are implemented properly, the teachers are expected to have better attitudes toward teaching and reform in general, and the students' achievement scores should improve.

Based on this hypothesis, Goldenberg and Sullivan (1995) implemented a school reform effort in a California elementary school. The school studied was primarily Latino, and the students were not performing well academically. At the beginning of the reform effort, Goldenberg and Sullivan (1995) and a number of teachers created an Academic Expectations Committee (which then became the Academic Assessment Committee), whose goal was to facilitate change in the school. This committee implemented the four components felt to be necessary for effective school change. For example, to implement the first factor in language arts, the committee members shared goals, brought in experts to provide inservice training and seminars to the staff, and grade level goals specifying products and process were established. For example, in the first grade, while they expected the students to be able to read, they also expected some of the students to exhibit emergent literacy characteristics such as pseudo-reading (guessing at words using pictures and other cues).

The committee developed indicators that measured success, such as book placement and performance assessment rubrics. They measured different aspects of students' literacy such as self-reading, attitudes toward reading and writing, competencies in writing summaries, and writing original story endings.

The third factor, assistance by more capable others, included making various groups of people (such as mentor teachers, administrators, outside experts, and fellow teachers) accountable to one another. This was implemented by forming workgroups that were grade specific and subject specific across grades, and were ongoing throughout the year.

The final component, leadership that supports and pressures, involved having committee members and administrators following through with the goals, reminding the teachers of their responsibilities to fulfill the goals, providing support for anyone in need, and seeking better ways to attain the goals if the teachers were experiencing difficulty.

With the four elements implemented, Goldenberg and Sullivan (1995) documented improvements in school climate in general. Teachers felt that they were in better positions to teach because of the level of student support from each other and from the administration. The

goal of higher academic achievement was also attained. Both English-dominant students who took the California Assessment Project (CAP) and the California Learning Assessment System (CLAS) tests, and Spanish-dominant children who took the Spanish Assessment of Basic Education (SABE) showed improvements since the onset of the project. Students in both groups were given a pretest in Spring 1990, and then assessed again in Spring 1993.

Before the project began, the schools' mean scores on the CAP were below those of both the district and the state. By the third year, the treatment students had surpassed students in the district on the CAP/CLAS in reading, and were close to the statewide scores. In writing, the students had outscored the district, but not the state.

With the Latino students, the treatment students remained below those of other school districts during the first year on the SABE on reading, but surpassed them for the second, third, and fourth years of implementation.

This was a school specific study, so there is no dissemination information available. The project directors emphasize that the model should be adapted to the school-specific situations in which it is being implemented.

Classroom Instructional Programs

Most of the programs currently available to schools for replication are classroom instructional programs, often focusing on a single subject. For example, the National Diffusion Network (1995) lists more than 500 replicable programs with some evidence of effectiveness, and the great majority of these are classroom innovations. The following sections discuss replicable classroom programs that have been researched and/or extensively applied with Latino students.

Cooperative Learning Methods

Cooperative learning refers to a broad range of instructional methods in which students work together to learn academic content. Research comparing cooperative learning and traditional methods has found positive effects on the achievement of elementary and secondary students, especially when two key conditions are fulfilled. First, groups must be working toward a common goal, such as the opportunity to earn recognition or rewards based on group performance. Second, the success of the groups must depend on the individual learning of all group members, not on a single group product (Slavin, 1995).

Cooperative learning methods are widely used throughout the United States and other countries with all kinds of schools and children, and the research on these methods has equally involved a broad diversity of schools and students. There are two cooperative methods, however, that were specifically designed for use in Spanish bilingual programs, and many more, even though not specifically intended for this purpose, have been researched and used in schools serving many Latino students (Calderón, 1991, 1994; McGroarty, 1993; Slavin, 1990). These are described in the following sections.

Bilingual Cooperative Integrated Reading and Composition

Bilingual Cooperative Integrated Reading and Composition, or BCIRC (Calderón, Hertz-Lazarowitz, Ivory, & Slavin, 1996; Calderón, 1994; Calderón, Tinajero, & Hertz-Lazarowitz, 1992) is an adaptation of Cooperative Integrated Reading and Composition (CIRC) (Stevens, Madden, Slavin, & Farnish, 1987) for application in bilingual classrooms. The original CIRC model, used in grades 2-8, involves a series of activities derived from research on reading comprehension and writing strategies (Stevens, Madden, Slavin, & Farnish, 1987). Students work in four-member heterogeneous learning teams. After the teacher introduces a story from a basal text or trade book, students work in their teams on a prescribed series of activities relating to the story. These include partner reading, where students take turns reading to each other in pairs; "treasure hunt" activities, in which students work together to identify characters, settings, problems, and problem solutions in narratives; and summarization activities. Students write "meaningful sentences" to show the meaning of new vocabulary words, and write compositions that relate to their reading. The program includes a curriculum for teaching main idea, figurative language, and other comprehension skills, and includes a home reading and book report component. The writing/language arts component of CIRC uses a cooperative writing process approach in which students work together to plan, draft, revise, edit, and publish compositions in a variety of genres. Students master language mechanics skills in their teams, and these are then added to editing checklists to ensure their application in students' own writing. Teams earn recognition based on the performance of their members on quizzes, compositions, book reports, and other products (Madden, Slavin, Farnish, Livingston, Calderón, & Stevens, 1996).

BCIRC adds to the CIRC structure several adaptations to make it appropriate to bilingual settings. It is built around Spanish reading materials in the younger grades and then uses transitional reading materials as students begin to transition from Spanish to English. The age of transition depends on district policies; materials to accompany Spanish basals and novels have been developed though the sixth grade, but most such materials are used in

transitional bilingual education programs only through the third or fourth grades. In addition, effective ESL strategies designed to engage students in negotiating meaning in two languages and increase authentic oral communication are built into the training program.

The original CIRC program has been evaluated in three studies in elementary schools (Stevens et al., 1987; Stevens & Slavin, 1995) and one study in two middle schools (Stevens & Durkin, 1992). In each case, CIRC students made significantly greater gains than control students on standardized tests of reading achievement. Two studies in Israel, one in Hebrew and one in Arabic, also found positive effects of CIRC compared to traditional methods (Hertz-Lazarowitz et al., in press; Schaedel et al., in press).

A four-year study of BCIRC was conducted in 24 grade 2-4 bilingual classes in El Paso, Texas (Calderón, 1994; Hertz-Lazarowitz, Ivory, & Calderón, 1993). Experimental and control classes were carefully matched. Students transitioned from mostly-Spanish instruction in second grade to mostly-English instruction in fourth grade. At the end of second grade, BCIRC students scored significantly better than control on the Spanish TAAS (Texas Assessment of Academic Skills) in both reading (ES=+.43) and writing (ES=+.47). In third grade, students were tested on the English Norm-referenced Assessment Program for Texas (NAPT), and again BCIRC students outperformed controls in reading (ES=+.59) and language (ES=+.29). Finally, fourth graders in BCIRC scored higher than controls in NAPT reading (ES=+.19), but not language. However, these differences were depressed by the transfer of students out of the bilingual classes into English-only classes, which happened with four times as many BCIRC as control students. Students who were moved out of the bilingual classes early tended to be the highest achievers, so deleting them from the sample reduced the apparent experimental-control differences.

CIRC is used in several hundred schools nationally, and BCIRC is used in more than a hundred, including Success for All programs with bilingual programs which use an adaptation of BCIRC. Training programs for CIRC and BCIRC exist at Johns Hopkins University in Baltimore and El Paso, and additional trainers in both models are located in many parts of the United States.

Complex Instruction/Finding Out/Descubrimiento

Complex Instruction is the name given to a set of cooperative learning approaches developed and researched by Elizabeth Cohen (1994a) and her associates at Stanford University. From its inception, the program has focused on Spanish bilingual classes. It was first built around a discovery-oriented science and mathematics program called Finding

Out/Descubrimiento, developed by DeAvila and Duncan (1980). Finding Out/Descubrimiento provides students with a series of activity cards in English and Spanish which direct them to do experiments, take measurements, solve problems, and so on. Students work in small, heterogeneous groups to do experiments and answer questions intended to evoke high level thinking. As it relates to bilingual education, a major focus of the program is to get students to use complex, sophisticated language to express, debate, and defend their ideas, thereby building language fluency first in their home language and then in English. Whenever possible, each group contains monolingual Spanish, monolingual English, and bilingual children, who freely translate ideas for each other. Complex Instruction adds to Finding Out/Descubrimiento a group structure, in which students take on specified roles (e.g., facilitator, checker, reporter) and learn group process skills, such as active listening, maintaining a positive group atmosphere, and ensuring equal participation. The program also emphasizes building positive expectations for all students; for example, by giving low status children opportunities to be the group expert and constantly reinforcing the idea that all children have different abilities, each of which is worthy of respect (Cohen, 1994a).

The evaluations of Complex Instruction/Finding Out/Descubrimiento have not generally met the standards established in this review. Most have reported positive correlations between the frequency of students' talking and working together and gains in student achievement (Cohen & Intili, 1981; Cohen, Lotan, & Leechor, 1989; Cohen, 1994b; Stevenson, 1982). This could be taken as an indication that better implementers of the program get better results, but it does not indicate that the children are performing better than they would have without the program. Similarly, reports of NCE gains in the program classes (Cohen, 1994b) are inadequate indicators of program impacts. Still, the accumulation of imperfect but supportive evidence and the clear focus on improving the higher-order thinking of students in bilingual programs makes this program appealing.

The Complex Instruction program at Stanford provides materials and professional development to support program adoption in elementary and middle schools, and it is used in many schools, particularly in California.

Student Teams-Achievement Divisions and Teams-Games-Tournament

Two related cooperative learning programs developed at Johns Hopkins University are among the most thoroughly evaluated of all cooperative methods, and have been extensively disseminated in schools with Latino children. These are Students Teams-Achievement Divisions (STAD) and Teams-Games-Tournament (TGT) (Slavin, 1994, 1995). In STAD, students work in four-member, heterogeneous learning teams. First the teacher provides the

lesson content through direct instruction. Then students work in their teams to help each other master the content, using study guides, worksheets, or other material as a basis for discussion, tutoring, and assessment among students. Following this, students take brief quizzes, on which they cannot help each other. Teams can earn recognition or privileges based on the improvement made by each team member over his or her own past record. TGT is the same as STAD except that students play academic games with members of the other teams to add points to an overall team score. Both programs emphasize the use of group goals (in this case, recognition) in which teams can only achieve success if each team member can perform well on an independent assessment. This motivates team members to do a good job of teaching and assessing each other.

Both STAD and TGT have been extensively evaluated in comparison to control groups in a wide variety of subjects. Across 26 such studies of at least four weeks duration, there was a median effect size of +.32 for STAD; in 7 studies of TGT, the median effect size was +.38 (Slavin, 1995). One study in Riverside, California (Kagan, Zahn, Widaman, Schwarzwald, & Tyrell, 1985), evaluated STAD and TGT with Latino students, and this study found no experimental-control differences in spelling for this group. However, two studies with significant numbers of Latino students did find positive effects of STAD, though they did not separately analyze results for Latino students. These were a study in Harrisburg, Pennsylvania (Stevens, Slavin, & Farnish, 1991) in which elementary students were taught to find the main ideas of paragraphs, and a study of spelling in San Diego, California (Tomblin & Davis 1985), which found nonsignificant positive effects of the program.

STAD and TGT are used in thousands of classrooms nationwide. A training program at Johns Hopkins University and certified trainers throughout the United States provide professional development in these methods.

Jigsaw

Jigsaw (Aronson et al., 1978) is a cooperative learning technique in which students work in small groups to study text, usually social studies or science. In this method, each group member is assigned to become an "expert" on some aspect of a unit of study. After reading about their area of expertise, the experts from different groups meet to discuss their topic, and then return to their groups and take turns teaching their topics to their groupmates. In a variation of Jigsaw called Jigsaw II (Slavin, 1994), students are given topics in a common reading, such as a text chapter, biography, or short book. After they have read the material, discussed it with their counterparts in other groups, and shared their topics with their own group, they take a quiz on all topics, as in STAD.

Jigsaw was first used with Latino students, and much of the research on this topic has involved schools in the Southwest serving many Latino students. The first brief Jigsaw evaluation (Lucker, Rosenfield, Sikes, & Aronson, 1976) found positive effects of the program for "minority students" (Latino and African American students analyzed together), but not for Anglos. A study in bilingual classes (Gonzales, 1981) and one in majority-Latino schools (Tomblin & Davis, 1985) found no achievement benefits. Outcomes for Jigsaw II have been more positive (Mattingly & VanSickle, 1991; Ziegler, 1981), but these studies have involved few Latinos.

Jigsaw is widely used nationwide. Training in numerous Jigsaw variations is provided by Spencer Kagan and his colleagues (Kagan, 1995) among others.

Learning Together

David and Roger Johnson's (1994) Learning Together models of cooperative learning are among the most widely used of all cooperative learning models. In these methods, students work in small groups on common assignments, typically creating a single group product. All group members are evaluated based on this product. In some applications of this method, groups may earn recognition or grades based on either overall group performance or on the sum of individual performances.

Many evaluations of Learning Together models have been very brief and artificial, but among those of at least four weeks' duration, evidence supports the achievement effects of forms of the Learning Together model that incorporate group goals and individual accountability (i.e., group success depends on the sum of individual performances). One year-long study of Learning Together took place in bilingual classes in Southern California, and this study found positive program effects on a standardized test of language but not on tests of reading, spelling, or math (Martinez, 1990).

The Johnsons' methods are widely used throughout the world. Trainers in these methods are located at the University of Minnesota and in many other parts of the United States.

Group Investigation

Group Investigation is a form of project-based learning developed by Shlomo and Yael Sharan (1992) and their colleagues in Israel. In this method, students form their own 2-6 member groups. The groups choose topics from a unit being studied by the entire class, break

these topics into individual tasks, and carry out activities necessary to prepare and present group reports. Studies of Group Investigation have generally supported the effectiveness of this approach, especially on higher-order skills (Sharan & Shachar, 1988). An adaptation of this approach is currently being implemented by Margarita Calderón in two-way bilingual schools in El Paso.

Curriculum-Specific Programs: Reading, Writing, and Language Arts

There are many well-evaluated and replicable programs designed for use in specific grades and subjects. In reading, two programs described earlier, Success for All/*Lee Conmigo* and CIRC/BCIRC, have documented positive effects with Latino as well as non-Latino students, and three additional programs are described in this section. In writing and language arts, effective methods generally include some form of writing process, in which students work together to plan, draft, revise, edit, and publish compositions. A general review of writing process models (Hillocks, 1984) found consistently positive effects on quality of students' writing. CIRC and BCIRC, described earlier, use process writing methods and have adapted them specifically to Spanish bilingual education. Other approaches to writing successfully that have been researched and/or disseminated with Latino students are described below.

Direct Instruction

Direct Instruction (DISTAR) (Bereiter & Engelmann, 1966), is an early elementary school program originally designed to extend the Direct Instruction early childhood curriculum (Bereiter & Engelmann, 1966) into the elementary grades as part of a federal program called Follow Through, which funded the development and evaluation of programs to continue the positive effects of early childhood programs. The primary goal of both the early childhood program and DISTAR was to provide low-SES children with opportunities to succeed academically by utilizing a scripted program that stresses structured direct instruction. Revisions of DISTAR have been disseminated in recent years under the titles of Reading Mastery/Math Mastery and Direct Instruction.

Teachers involved in DISTAR have specific instructions on how to teach each of the units presented to the students, as well as what units to teach them. Students initially begin with DISTAR in either kindergarten or first grade. Progress in DISTAR is usually monitored by evaluating academic performance of students in the program, using both criterion-

referenced and norm-referenced measures. The DISTAR curriculum was not specifically written for Latino students, but it has been used and evaluated among Latino children.

The most comprehensive evaluation of DISTAR compared the results of nine Follow Through programs that also had early-childhood education programs. Each program was compared to control groups that were not implementing Follow Through (Abt, 1977). The total number of subjects was 9,255 for the Follow Through (experimental group) and 6,485 for the non-Follow Through students.

All of the children were from similar socioeconomic backgrounds. The study evaluated the effects of the programs on academic achievement, cognitive achievement, and self-esteem, as measured by performance on norm-referenced tests such as MAT, Ravens Progressive Matrices, Coopersmith Self Esteem Inventory, and the Intellectual Achievement Responsibility Scale. Programs were clustered in three groups in terms of their overall goals for the children. The first cluster of programs stressed individualized, child initiated activities, and focused on the development of the whole child. Examples of these programs included the Open Education Model, Tucson Early Education Model, Cognitively Oriented Curriculum, Responsive Education Model, and the Bank Street College Model.

The second cluster of programs stressed direct instruction, with the specific goal of developing and improving students' academic skills. These two programs were the Behavior Analysis model and the Direct Instruction model. The final cluster included programs whose goals were to improve specific areas related to the performance of the children. These programs were the Florida Parent Education Model and the Language Development (Bilingual) Model.

Direct Instruction and Behavior Analysis were the only models that showed substantial effects both when compared to non-Follow Through programs and when compared to other programs. Other programs evaluated showed either effects of zero, or negative effects when all three of the skills (basic, cognitive, or affective) were measured. The Direct Instruction group did better than all of the other groups on the MAT language (ES=+.84) and mathematics computation (ES=+.57). Direct Instruction students also scored somewhat higher in reading comprehension (ES=+.07) and mathematics problem solving (ES=+.17), and were also higher in self-esteem.

Becker and Gersten (1982) studied the lasting effects of Direct Instruction on students in fifth and sixth grades. This study followed up students who had been in DISTAR in grades 1-3 in five sites. The students were matched with control groups based on income level, gender, primary home language, and mother's education level, and these factors were used as

covariates. One of these sites (Uvalde, Texas) consisted primarily of Latino students. Students in this site were pretested in Spring 1975, using all subtests of the MAT, and also the Language Acquisition Scale test. This study was then replicated using posttest scores in 1976. Overall results show that DISTAR students outperformed non-DISTAR students on the overall Wide Range Assessment Test (WRAT) (ES=+.53), and on all of the subtests of the MAT. The Uvalde students outperformed their control-group counterparts on all of the WRAT tests (ES=+.47) and on the MAT in 1975 (ES=+.03 to +.33) and in 1976 (ES=+.04 to +.52).

Gersten (1985) addressed the use of Direct Instruction in second language learning in a study that assessed the longitudinal progress of low-income English language learners in grades 3-6. The program served LEP students in a structured immersion model that included giving students and teachers a structured curriculum designed to ensure their academic success.

The population of this study was predominantly Asian students in two cohorts. Treatment group students (structured immersion Direct Instruction) were compared to students who were in traditional bilingual programs. Students were initially pretested using the Language Assessment Scale (LAS), and the CTBS reading, Total Math, and Total Reading scores. The students were neither randomly assigned to groups nor matched at the beginning of the evaluation. Students in the control group whose baseline scores fell below grade level were not included, whereas all of the Direct Instruction students, regardless of their baseline scores, were included. The Language Assessment Scale scores for both groups were similar. For both of the cohorts, the DISTAR group had more students at or above grade level than did the comparison groups.

Meyer (1984) investigated the long-term effects of DISTAR on children who had had three and four years of the program, and compared their achievements to those of matched control groups. The study involved three cohorts of students from a New York City elementary school. Students in the Direct Instruction Follow Through school in New York City were matched with control group students based on achievement scores on the MAT, free lunch eligibility, and ethnicity (African American and Puerto Rican).

Evaluators compared the two groups of students on high school graduation rate, ninth grade reading score, ninth grade math score, student's application to college, student's acceptance to college, student's special education placement, and student's school attendance for the previous year. Students who had been involved in the program in 1968-1969, 1969-1970, or 1970-1971 were followed up in 1981, when they were high school seniors.

Over the three cohorts, more than 63% of the Direct Instruction students graduated from high school, as opposed to 38% of the control group. An average of 21% of the Direct

Instruction students were retained compared to 33% of the control students. The Direct Instruction students had a lower dropout rate (28%) than the control group (46%) over the three cohorts. More of the Direct Instruction (34%) group students applied to college than the control group (22%), and more of the Direct Instruction group students were accepted for admission to college over the three cohorts (34%) than were the control group students (17%).

The follow-up evaluation also compared ninth-grade mean reading and math scores in grade equivalents. Overall, students in the Direct Instruction cohort outperformed students in the control group in reading (ES=+.41) and in math (ES=+.29).

Exemplary Center for Reading Instruction

The goal of the Exemplary Center for Reading Instruction (ECRI) (Reid, 1989) is to improve elementary students' reading ability. This program emphasizes such reading-related skills as word recognition, study skills, spelling, penmanship, proofing, and writing skills, leading to improvement in decoding, comprehension, and vocabulary.

ECRI teachers expect all students to excel. The lessons for ECRI are scripted, and incorporate multi-sensory and sequential methods and strategies of teaching. In a typical lesson, teachers introduce new concepts in lessons using at least seven methods of instruction, teaching at least one comprehension skill, one study skill, and a grammar/creative writing skill. Initially, students are prompted for answers by teachers. As the students begin to master the information presented, fewer and fewer prompts are provided until students can perform independently. ECRI was not originally developed for Latino students, but it has been used among Spanish-speaking and bilingual students. Evaluations of ECRI have included a variety of students, but its effectiveness has also been measured specifically among Latino students.

In one evaluation of ECRI (Reid, 1989), researchers investigated the effects of ECRI on students in grades 2-7 in Morgan County, Tennessee, and compared them to students in a control group who were using a commercial reading program. Both schools were tested using Stanford Achievement Test reading comprehension and vocabulary subtests. ECRI students outperformed those in the control group, with effect sizes ranging from +.48 to +.90 in reading comprehension, and from +.31 to +1.40 in vocabulary. In an evaluation of the effectiveness of ECRI on Latino bilingual students in Oceanside, California, Killeen, Texas, and Calexico, California (Reid, 1989) showed NCE gains that ranged from +6.4 to +25.7. ECRI is used in hundreds of schools nationwide including many serving Latino students.

Reciprocal Teaching

Reciprocal Teaching (Palincsar & Brown, 1984) is a reading program designed to improve the reading comprehension of children in elementary and middle schools that emphasizes cognitive strategies of scaffolding through dialogue.

The main two components of Reciprocal Teaching are comprehension fostering, which includes the four strategies of question generation, summarization, prediction, and clarification and dialogue, which includes prepared conversations and questions that guide the comprehension process and product. The program uses a scaffolding process, in which teachers are initially more responsible for producing questions, guiding the dialogue, and showing the students how to comprehend text. Eventually, the students become more responsible for the products, creating questions for each other and guiding the dialogue with less teacher input.

A typical Reciprocal Teaching session begins with students reading an initial paragraph of expository material, with the teacher modeling how to comprehend the paragraph. The students then practice the strategies on the next section of the text, and the teacher supports each student's participation through specific feedback, additional modeling, coaching, hints, and explanation. The strategies include commenting and elaborating on summaries of paragraphs, suggesting additional questions, providing feedback on their peers' predictions, and requesting clarification of material not understood.

Although Reciprocal Teaching has several important components that distinguish it from other reading approaches, it is flexible. For example, in some forms of Reciprocal Teaching, the cognitive dialogue precedes the text reading exercise; in other forms, cognitive dialogue takes place while the students are reading the text.

A meta-analysis of the achievement effects of Reciprocal Teaching was carried out by Rosenshine and Meister (1994). Sixteen studies representing different levels of implementation (high, medium, and low) and different methods of teaching were synthesized. High implementation studies included dialogue, questions, and assessment of student learning strategies, medium level studies included dialogue but did not include assessments, and low level studies had neither dialogue nor assessment information.

The meta-analysis investigated how Reciprocal Teaching students performed on standardized and experimenter-made tests as compared to their control-group peers. The overall effect size for performance on standardized tests was +.32, but only in two cases did the Reciprocal Teaching students do better than their control group counterparts. Effect sizes were much higher on the experimenter-made tests (ES=+.88). In several cases, effect sizes

were lower in studies in which implementations were rated as low in quality, but there were few differences between the outcomes of high and medium quality implementations.

Reciprocal Teaching has not been studied in schools serving many Latino students, but it has been widely disseminated in schools including such students.

Profile Approach to Writing

The Profile Approach to Writing (PAW, 1995; Hughey & Hartfiel, 1979; Jacobs, Zinkgraf, Wormuth, Hartfiel, & Hughey, 1981; Hughey, Wormuth, Hartfiel & Jacobs, 1983; Hartfiel, Hughey, Wormuth, & Jacobs, 1985) is a program that provides professional development in creative writing to students in grades 3-12. The program emphasizes a process of drafting and revision of compositions, and makes use of a writing profile to assess and guide student writing performance. The profile is a holistic/analytic scale that assesses content, organization, vocabulary use, language use, and mechanics in students' compositions. PAW was not specifically developed for use with Latino students, but has been extensively used and evaluated in schools with many Latino students.

Several evaluations of the Profile Approach to Writing have been carried out by the program developers (Profile Approach to Writing, 1995). One of these compared students in a predominately (55%) Latino middle school in Texas to a control group. Students in the experimental and control group were pre- and posttested on the project's own Composition Profile, the 100-point holistic/analytic scale used in the instructional program. Experimental and control students were similar in scores at pretest. Students in the PAW school gained significantly more than those in the control group (ES=+.69) in a year-long comparison. Other less well-controlled evaluations on district-administered tests also found positive effects of PAW in middle and high schools not serving significant numbers of Latino students.

A methodological limitation of the main experimental-control comparison is the fact that it used the project's own evaluation instrument, which teachers and students had been using all year. However, holistic/analytic writing comparisons of this kind are common in many writing performance measures and are widely accepted by writing curriculum experts. The replicability of PAW has been amply demonstrated. The program is in use in more than 1000 schools and has certified trainers in seven states.

Multicultural Reading and Thinking

Multicultural Reading and Thinking (McRAT) is a writing program that trains teachers to improve students' academic achievement by adding multicultural themes to all areas of the curriculum in grades 3-8. The program, developed by the Arkansas Department of Education (Quellmalz & Hoskyn, 1988, Arkansas Department of Education, 1992; Quellmalz, 1987), is intended to make students better readers and writers by adding multicultural and problem-solving components to all areas of the curriculum. McRAT does not exist as a stand-alone program, but works with the existing school curriculum. It strives to teach children to think critically about what they read in class, so that they can apply these critical processes to their writing and to real-life situations in which people of different backgrounds have to learn to work and live together. Specific skills that the children are taught include analysis, comparison, inference/interpretation, and evaluation, and these skills are used in all areas of the curriculum.

In the study that evaluated the effects of McRAT on achievement, students represented a range of socio-economic status backgrounds, achievement levels, and ethnic backgrounds. This evaluation (Arkansas Department of Education, 1992) studied the effects of McRAT on achievement scores in the specific cognitive areas that the students were taught in the program; McRAT students were compared to matched control students.

The students in the treatment group were 32% minority, 15% gifted and talented, and 25% Title I students. In the control group, the students were 30% minority, 15% gifted and talented, and 10% Title I students. Students in both the experimental and control groups were using the same curriculum, the only difference being that students in the experimental group had McRAT-trained teachers. Students in this sample included 234 fourth-, fifth-, and sixth-grade McRAT students, and 106 fourth-, fifth-, and sixth-grade non-McRAT students. Teachers in the treatment group were either in their first or second years of McRAT implementation. Students in both groups were assessed using an assessment measure created by the project in September and again in May. The McRAT students outperformed the control students in the areas of analysis (ES=+.41), inference (ES=+.57), comparison (ES=+.65), and evaluation (ES=+.45). McRAT joined the National Diffusion Network in 1993, is currently used in 44 schools in Arkansas, and is also being disseminated nationally. It has not been used extensively with Latino students as yet.

Curriculum-Specific Programs: Mathematics

Four mathematics programs met the inclusion standards applied in this review.

Comprehensive School Mathematics Program

The Comprehensive School Mathematics Program (CSMP, 1995) is a math program for grades K-6 that emphasizes problem solving rather than drill and practice lessons. CSMP strives to teach children the mathematical thinking skills and concepts that they need to use when approached with new math problems. The contents of the CSMP curriculum range from basic skills such as addition and subtraction to more abstract skills such as probability, statistics, and classification using higher order thinking skills, understanding of concepts, and algorithmic thinking. The program incorporates the use of calculators and computers.

CSMP uses different types of "languages" for performing different types of mathematical functions. For example, the language of strings is used to gather data, the language of arrows places the different components of the mathematical problem into sets, and the language of a minicomputer allows the children to compute different problems using an abacus. Students also use manipulatives, such as tiles and blocks, to solve their problems. Although not originally designed for use with Latino students, CSMP has been applied in many districts with large Latino populations, including bilingual schools.

The materials used in CSMP were developed in classrooms in the Carbondale, Illinois, and University City, Missouri school districts, both of which are integrated (20-50% African American) middle class communities. Disproportionately high numbers of both high- and low-performing students were included in the program development. After the initial pilot testing, the materials were tested nationwide. CSMP was developed, evaluated, and initially disseminated by CEMREL, a former education laboratory in St. Louis.

Two research designs were used to evaluate CSMP (Comprehensive School Mathematics Program, 1995). The first design controlled for teacher effects: Teachers taught the regular curriculum during the first year and the CSMP curriculum during the second year. In the second design, CSMP classes were matched with a control group studying the regular curriculum. In both designs, students were given a problem solving test called Mathematics Applied to Novel Situations test (MANS), which was created by CEMREL.

The CSMP students outscored the control students in the second, third, and sixth grades, with effect sizes of +1.26 +.22, and +.30, respectively. In the fourth and fifth grades,

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the non-CSMP students outperformed the CSMP students, with effect sizes of -.16 and -.32, respectively.

CSMP, which has been an NDN program since 1978, is now disseminated by another educational laboratory (MCREL, in Aurora, Colorado) and has been used in districts throughout the United States.

Cognitively Guided Instruction

Cognitively Guided Instruction (CGI) (Carpenter, Fennema, Peterson, Chiang, & Loef, 1989; Carey, Fennema, Carpenter, & Franke, 1993) is a mathematics program designed to develop student problem solving in the early elementary grades. CGI was created to teach the teachers of first grade students about problem-solving processes that their students use when solving simple arithmetic and complex mathematics problems and to train the teachers to create curricula consistent with new understandings of how children learn. Following extensive training, CGI teachers create units and themes to last the entire school year. The Cognitively Guided Instruction model was not specifically created for Latino students, but has been used among students of various ethnicities and SES levels.

In an evaluation of CGI (Carpenter, Fennema, Peterson, Chiang, & Loef, 1989), forty teachers were randomly assigned to either a control or a treatment group. CGI as well as control teachers had volunteered to participate in a summer in-service program that would last four weeks, and also to be observed in their classrooms during instruction in mathematics during the following year. Teachers in both of the groups were involved in problem solving workshops, but one was a CGI workshop, and the other was a generic problem solving workshop. Teachers in the CGI workshop, for instance, learned that they should closely relate problem solving to basic skills competency, and that problem solving should be the main focus of the mathematics lessons. They also learned that students should use prior knowledge when solving problems and be able to link what they already know to new problems that they may be solving. Teachers in the CGI workshop learned about teaching children conceptual problem solving, and the teachers were familiarized with curricular materials available for instruction. Finally, CGI teachers were asked to write a mathematics curriculum, based on what they had learned at the CGI workshops, that would span the academic year.

Teachers in the control groups also participated in problem solving exercises for a similar amount of time. The teachers learned about the general concept of problem solving, but did not discuss how to understand how children solve problems or how to write a curriculum that would help children to solve problems based on this information.

All students were given the Iowa Test of Basic Skills (ITBS) level 6 as a pretest in September, and the computation subtest of the ITBS level 7 was used as the written posttest of computation in April-May. Interviews were also conducted with the students.

Student achievement results showed that CGI students outscored their control group counterparts in computations (specifically in number facts) and in problems that involved complex addition/subtraction. Interviews also found that treatment students also had better attitudes toward math and felt more confident that they could perform complex mathematics.

A second study of CGI evaluated the effectiveness of the program among low-income minority students (Villasenor & Kepner, 1993). Twelve experimental and twelve control teachers were randomly assigned to CGI and control classes in Milwaukee. Minority populations ranged from 57% to 99%, primarily Latino or African American. A 14-item arithmetic word-problem test focusing on higher level cognitive processes (Carpenter, Fennema, Peterson, Chiang, & Loef, 1989), developed by the creators of CGI, was administered as a pretest in early October, and again as a posttest in late February and early March.

On the pretest, students in the experimental group had a slightly higher mean score than did students in the control group. Controlling for these differences, the experimental students still outscored their control-group counterparts.

CGI is currently being implemented in several states, and training programs for the model have been established in Wisconsin, North Carolina, and Ohio.

Project SEED

Project SEED (Johntz, 1966; 1975; Phillips & Ebrahimi, 1993; Hollins, Smiler, & Spencer, 1994; Project SEED, 1995) is an enrichment mathematics program designed to teach elementary school students, particularly low-income and minority students, to develop confidence in their ability to be successful in all academic work. Project SEED prepares students to be successful in their academic careers, and gives them the grounding to help them face challenging academic situations by using advanced mathematics as a tool. Students participating in Project SEED are taught to improve their mathematics achievement skills and to continue to take classes in abstract and advanced mathematics at a rate that is higher than those of students not involved in the program.

Project SEED hires and trains mathematicians, scientists, and engineers to teach students in the targeted population. Project SEED mathematics specialists then go into the

classroom and introduce abstract mathematical concepts using a discovery method based on Socratic questioning, and always making students active participants in the lessons. The Project SEED curriculum does not take the place of the regular mathematics curriculum, but is a supplement to it. When the Project SEED mathematics specialists teach the students, the regular classroom teachers remain in the classroom and observe and participate in what is being taught. Students involved in the program are expected to learn using dialogue, choral responses, discussion, and debates. In addition to teaching the students, the Project SEED mathematics specialists conduct workshops with the regular classroom teachers. Part of ongoing staff development includes Project SEED math specialists observing and critiquing each other in the classroom at work and attending internal workshops. Project SEED was not specifically designed to benefit Latino students, but its use among Latino students has been evaluated in various states that have high populations of Latino students.

A study that evaluated the effects of one semester of Project SEED in Detroit (Webster & Chadbourn, 1992) compared the California Achievement Test (CAT) scores of 244 fourth grade students in SEED classrooms to those of 244 fourth grade students in SEED schools, but not in SEED classrooms (non-SEED), and to those of 244 fourth grade students neither in SEED schools nor in SEED classrooms (comparison group) during the 1991-92 academic year. Students in all three groups were matched based on gender, ethnicity, free or reduced lunch status, and third grade CAT scores.

The SEED students outscored comparison group students in total math scores (ES=+.37), math computation (ES=+.38), and math concepts (ES=+.32). The non-SEED students in SEED schools also outscored the comparison students in all three areas with effect sizes of +.17, +.23, and +.13 respectively. When the SEED and non-SEED students were compared, students in the SEED group also outperformed students in the non-SEED groups on math total (ES=+.19), math computation (ES=+.16), and math concepts (ES=+.19).

The effect of one semester of SEED was also evaluated in Dallas in a Project SEED longitudinal evaluation study (Webster & Chadbourn, 1992). The Dallas evaluation consisted of eleven elementary Learning Centers (South Dallas Learning Centers and West Dallas Learning Centers). Students in the South Dallas Learning Centers were 80% African American, and students in the West Dallas Learning Centers were mostly Latino. There was a total of 10,890 Project SEED and matched comparison students. The treatment students were those who had been involved in Project SEED for at least one semester between 1982 and 1991. Students were administered either the Iowa Tests of Basic Skills (ITBS) or the Norm-referenced Achievement Program for Texas (NAPT). The test scores between the control and experimental groups were equivalent at the beginning of the experiment. Students were tested

on three ITBS scales: concepts and problem solving, computation, and mathematics total. As with the Detroit study, SEED students significantly outscored the non-SEED students on all scales.

The cumulative effects of Project SEED on students after one, two, and three semesters of involvement were also investigated (Webster & Chadbourn, 1992). A total of 3,092 students in five different settings were matched with control students on the basis of grade level, total mathematics achievement score, gender, ethnicity, and socioeconomic status, as determined by free lunch program participation. Beginning in the fourth grade, students in the treatment group received either one, two, or three semesters of Project SEED. Students were matched with students in other schools who did not receive SEED instruction, but may have received other types of intervention. Students were pretested on the ITBS, and after 1991, the Norm-referenced Achievement Program for Texas (NAPT). In every case except one out of thirty comparisons, the Project SEED students significantly outperformed the students in the control groups on the posttests for both the NAPT and the ITBS, and the more semesters that a student had been involved in Project SEED (up to the maximum of three semesters), the greater the cumulative effect of Project SEED.

A follow-up study (Webster & Chadbourn, 1992) sought to evaluate the retention of mathematics skills after students had left Project SEED. This study included a total of 1,215 matched students from the previous study. Students who had been involved in the project for only one semester were followed for five years after their involvement, and students who had received three semesters of Project SEED in grades 4-6 were followed through the 1991-1992 school year. Overall, Project SEED students, regardless of how long they had been in the program, still outscored the non-SEED students on the ITBS/NAPT up to two years after Project SEED exposure ended. More specifically, students who had been involved in Project SEED for one semester retained their mathematics skills for at least two years after they had left the program, and students who had been involved in the program for three semesters still retained their skills when tested between two and five years after they had left the program.

In the final Dallas longitudinal follow-up study of Project SEED (Webster & Chadbourn, 1992), results showed that students who had been involved in Project SEED were more likely to enroll in advanced mathematics classes in the 9th, 10th, 11th, and 12th grades than were students who had not been involved in Project SEED.

Project SEED is currently being used in Texas, Michigan, Indiana, Pennsylvania, and California, and is validated by the National Diffusion Network.

Skills Reinforcement Project

The Skills Reinforcement Project (SRP, 1984; Mills, 1992; SRP, 1992; SRP, 1995) was developed by the Johns Hopkins University Center for Talented Youth (CTY). CTY began as a program for gifted or "highly able" students, but it later added SRP, which is specifically designed for use with minority or low socioeconomic students who are likely to be underrepresented in advanced mathematics. The program was written to prepare fifth through eighth grade students to succeed in advanced level mathematics, with hopes that they would eventually become involved in mathematics and science careers. The program was not specifically designed for Latino students, but many of the students involved in the research have been Latino.

Staff in schools that adopt SRP attend training sessions before the implementation and during the year. SRP schools have a coordinator, who oversees the general management of the program at the school, and also oversees teacher training, curriculum development, and program evaluation. In addition to this, SRP schools involve a site director who acts as a facilitator for the program.

Students involved in the SRP program are volunteers. They attend Saturday school during the school year, and then they participate in a two-week summer residential program. Students are initially assessed and then teaching is based on the results of this testing. The SRP program provides a balance of individualized instruction and cooperative learning. The content of the SDP curriculum ranges from arithmetic concepts and skills to more advanced areas of study such as algebra, geometry, and statistics.

Research on SRP has been done at two sites in California, at schools with populations of 40% African American, 40% Latino, and 20% other, with a majority of the minority students qualifying for free lunches. The research design for all of the evaluations consisted of pre-post experimental/control comparisons. Student participants in both the control and treatment groups were volunteered by parents, and had to score between the 80th and 95th percentiles on the California Achievement Test. Students who met the criteria were randomly assigned to the SRP and control conditions, where the experimental students received substantial additional mathematics instruction, and the control group students received no extra mathematics instruction. The students were also equivalent on the basis of gender, ethnicity, income level, and mean pretest scores.

In addition to the CAT, the Sequential Tests of Educational Progress II (STEP) were used as a pre- and posttest. The School and College Ability Test (SCAT) was used to assess mathematical reasoning ability.

The first evaluation was done in Pasadena, California (Lynch & Mills, 1990). In this study, 32 SRP and 32 control sixth graders were administered the CAT and the STEP while they were in the sixth grade, and again nine months later in the fall, when they were in the seventh grade. Adjusting for pretest differences, SRP students outperformed their control group counterparts (ES=+.41).

A replication study was also done in Pasadena (SRP, 1992). This study involved 38 students; 19 in the control group, and 19 in the experimental group. In this study also, SRP students outscored the control group on both the SCAT (ES=+.72) and on the CAT/STEP tests (ES=+.73).

The third evaluation was done in Los Angeles (Mills, Stork, & Krug, 1992). This study involved 54 students; 28 SRP students and 26 students in the control group. Once again, SRP students outscored the students in the control group on the SCAT (ES=+.55) and on the CAT/STEP (ES=+1.35).

It is important to note that the evaluation of SRP does not compare one instructional method to another, but instead compares additional mathematics instruction to no extra instruction. SRP is currently being used in three California school districts.

Maneuvers With Mathematics

Maneuvers With Mathematics (MWM) was founded at the University of Illinois at Chicago (Page, 1989; Long, 1993; MWM, 1995). This program was designed to teach students in grades 5-8 advanced mathematics problem solving. The goal of MWM is to motivate students to use mathematics in a creative manner, while still learning basic arithmetic skills. MWM trainers attend training sessions in summer institutes.

An emphasis of MWM is on training both the teachers and students to use calculators to solve both simple arithmetic and complex geometry and advanced mathematics problems. Students are shown how math is used every day — for example, in cooking, traveling, building houses, and using money. They use specific books created by MWM which stress problem solving, rechecking answers, and using mathematics in real-life situations. Teacher guides provide alternative ways of presenting topics and concepts to the students. This program was not originally developed for Latino students, but has been used with this population.

The main evaluation of this program was done in 1991. This evaluation involved 617 MWM students matched with 223 control students (MWM, 1991). The students in both groups exceeded the state norms in mobility and in the number of low income, limited English

proficient (LEP) students. At the beginning of the year, students in both groups were administered pretests created by the Second International Mathematics Study (SIMS) and the National Assessment of Educational Progress (NAEP). The same tests were also used as posttests at the end of the school year. Students were not allowed to use calculators on these tests.

Adjusting for pretest differences, the MWM students outperformed the students in the control group (ES=+.47). At each individual grade level, MWM students made better gains than the students in the control groups (ES = +.12, +.54, +.59, and +.86 in the fifth, sixth, seventh, and eighth grades, respectively).

MWM is validated by the National Diffusion Network, and is currently being used in all fifty states nationwide.

Curriculum-Specific Programs: Early Childhood

One of the best ways to ensure that students succeed in school is to provide them with high-quality experiences before they enter school. Although studies of long-term impacts of early childhood programs have a long history, there is relatively little research on the effects of such programs on Latino students. In the sixties, when most of this research was begun, the main populations studied were African American and Anglo students. This section discusses programs that have proven to be effective for preschool students in general. Many of these programs were not designed for Latino students, but some have been evaluated with them, and address their needs. In addition to the programs reviewed here, preschool and kindergarten curricula are part of Success for All/*Lee Conmigo*, discussed earlier.

Head Start

The largest federal investment in early childhood education is Project Head Start (Zigler & Muenchow, 1992; Zigler & Valentine, 1979). Head Start began as one of President Johnson's War On Poverty programs in 1965. The goal of Head Start was to provide young children (mainly four-year-olds) with social and cognitive competence, by addressing certain specific outcomes felt to increase the likelihood that students would succeed when they entered elementary school. It was designed to achieve these outcomes through seven service components: education, parent involvement, mental health, physical health, nutrition, social services, and disabled student services or special needs.

Head Start has served millions of children since its inception in 1965, and its effects have been extensively evaluated. Like Title I, Head Start is a funding source, not a specific program. Thus, it is difficult to evaluate Head Start as a whole, as many different Head Start centers have different curriculum goals. Studies have shown that, overall, the program is effective in helping children adjust to kindergarten and elementary school (McKey, Condelli, Ganson, Barrett, McConkey, & Plantz, 1985), in including parents as participants in their children's education, and in seeing that children are up-to-date on their immunizations. Evaluations of the academic achievements of students who attend Head Start schools and centers generally find positive effects on early cognitive measures (such as IQ tests).

Karweit (1989, 1994) and Stein, Leinhart, and Bickel (1989) reviewed the effects of Head Start programs, and their syntheses found that Head Start showed immediate improvement on cognitive functioning (ES=+.52). After the first year, the effects decreased substantially (ES=+.10), and also decreased further during the second and third years (ES=+.08 and +.02 respectively). Longitudinal studies of the Perry Preschool program, described below, have found positive effects of preschool participation on such outcomes as high graduation and delinquency, but there is little indication at any age that attending Head Start or other early childhood programs increases performance on measures of school achievement, such as reading or math scores.

In recent years, the Latino student population has increased in the elementary schools and among young children receiving early childhood education. Head Start and many other publicly-funded preschool programs have proven to be effective in helping both children and their parents get adjusted to schooling systems in the United States. Especially with Spanish speaking students, Head Start has provided innovative bilingual and English as a Second Language instruction. One of the requirements of Head Start, for instance, is that if there is at least one child who speaks a second language, then the program is expected to employ at least one person on staff who speaks the language of the child and the parents. This is crucial, as the goal of Head Start is really to work with the whole family for the benefit of the child. Head Start teachers and staff provide bilingual services in all of the seven components, seeking to ensure that the students adjust smoothly to Head Start and eventually to elementary school.

Perry Preschool/High Scope

One of the most extensively researched curriculum-specific early childhood education programs is the Perry Preschool Curriculum (Weikart, Rogers, Adcock, & McClelland, 1971). The creators of the Perry Preschool Curriculum believe in empowering the family, the child, and the teacher, as in Head Start programs, but the Perry Preschool program also has specific

academic goals for participants in the program and its developers created a specific curriculum to accomplish these goals. Based on Piaget's theories of cognition, the Perry Preschool curriculum seeks to increase academic achievement and reduce students' chances of being placed in special education classes by teaching them to become active learners. The teacher acts as a facilitator of knowledge who sets up the classroom in such a way that the student is provided with the opportunity to learn math, science, reading, art, music, social studies, and movement every day. Students choose what they wish to study or work with, but the teacher is expected to be available to answer any questions and clarify any misunderstandings that students may have.

The Perry Preschool model has been evaluated to investigate both short-term and long-term outcomes with at-risk preschoolers. As with other preschool programs, the Perry Preschool program has shown immediate (end-of-the-year) positive effects on cognitive measures such as IQ, but these effects do not maintain into elementary school.

In addition to the cognitive gains made by students who had attended Perry Preschool programs, a longitudinal evaluation of the effects of the Perry Preschool program on at-risk students (Schweinhart & Weikart, 1980; Schweinhart, Weikart, & Larner, 1986a; Schweinhart, Weikart, & Larner, 1986b) showed that children involved in these programs tended to stay in school longer, had fewer cases of teenage pregnancies and juvenile arrests, were retained less, were less likely to drop out of school, were more literate, were more likely to be employed, and were more likely to attend college or vocational school than students in control groups who had had no preschool experience. Evaluations of the long-term effects of the program on social adjustment showed that when students in three preschool groups (Direct Instruction, High Scope, and nursery) were compared on self-reported delinquency, High Scope students were the least likely to have committed delinquent acts, followed by students who had attended traditional nursery school, and followed by students involved in Direct Instruction.

A twenty-two year follow-up study done on 95% of the participants involved in the original High Scope study (Schweinhart, Barnes, Weikart, Barnett, & Epstein, 1993) showed that High Scope graduates still had a smaller chance of being arrested than the control group (35%); earned approximately $2,000 per month more than non-program members; were more likely to own their own home (36%) than non-program participants (13%); and had a higher rate of high school graduation (71%) than the control group students (54%). The High Scope curriculum exists today in all 50 states. The program provides an early elementary curriculum that is also used around the nation. Although the High Scope model has not been studied in schools serving many Latino students, it has been disseminated to such schools.

Early Intervention for School Success

Project Early Intervention for School Success (EISS, 1986; Rogers, 1993) is an early intervention program developed under special funding from the California Legislature to provide low-income children with early education opportunities to help them become successful learners and thinkers. The legislative intent of this program was threefold: First, to establish a system to identify pupils at the ages of 4 to 7 who may be at-risk; second, to implement appropriate instructional programs to reduce the frequency and severity of learning disability for these pupils in later years, and third, to reduce the likelihood that these pupils will be placed in remedial programs with higher costs. Specific learning areas that this program strives to improve include receptive language, visual motor skills, and academic achievement.

EISS works with early childhood providers in California to teach them effective ways to educate children by training them to use developmentally appropriate curricula. Specifically, the teachers are trained in organization and planning, assessment, strategies, and curriculum. The EISS program does not have its own curriculum, but rather it trains teachers to adjust their own curricula so that the children are being taught content that will benefit them academically, linguistically, culturally, and ethnically. EISS facilitators also train the teachers to be sensitive to the cultural and economic backgrounds of the students. Academic goals of the program include improving the children's receptive language and their visual motor skills.

Although the program was not designed to benefit Latino students only, they represent a substantial portion of the population that has used this program over the years. Spanish-dominant LEP students involved in EISS were analyzed as a subgroup beginning in the 1987-1988 academic year.

To date, two studies have evaluated the effectiveness of EISS. In the first study, which compared control and experimental groups, the effects of EISS on receptive language and visual motor skills were evaluated. The students in the treatment group received the EISS curriculum for a period of 7.2 months between pre- and posttesting. EISS students outperformed the control group on the Peabody Picture Vocabulary Test (PPVT), with effect sizes of +.31 in 1989-1990, and +.29 in 1990-91. Visual motor skills, which were measured using the Visual Motor Integrated test (VMI), produced similar outcomes in favor of EISS students, with an effect size of +.50 in 1990-91.

To evaluate the long-term academic achievement effects of EISS on both English- and Spanish-speaking children, a number of different tests were used. The Comprehensive Test of Basic Skills (CTBS-4) and the Stanford Achievement Test (SAT-8) were used for the English speaking children, and the Aprenda was used for the Spanish-speaking children who had

received EISS in kindergarten during the 1989-1990 academic year. When compared to a matched non-EISS group, students maintained large gains (ES=+1.09) the first year after the program, and medium gains (ES=+.65) after being out of the program for two years.

EISS also performed a longitudinal study (EISS, 1995) to investigate the long-term effects of the program on achievement, the number of special education placements, and grade retention. This study included 5,095 students in EISS and 6,333 matched students in control schools. Students in the control groups showed a decrease in retention, but not to the same extent as the EISS group, compared to the two years before EISS implementation. Observations in the long-term study show that EISS students were retained at a lower rate than the comparison students, the lower rates were sustained through third grade, and significantly fewer students were placed in special education classes by the third or fourth grade.

EISS was recognized as an exemplary program by the National Diffusion Network in 1994, and has served approximately 270,000 students in over 500 schools in California.

Tutoring Programs

Reading Recovery/*Descubriendo La Lectura*

Reading Recovery (RR) was developed in the mid 1970s by New Zealand educator and psychologist Marie M. Clay (1985), who conducted observational research in the mid 1960s that enabled her to design techniques for detecting and intervening with early reading difficulties of children. During the 1988-1989 academic year, Reading Recovery was introduced to the United States by researchers at Ohio State University, who had previously received training in New Zealand (Pinnell, DeFord, & Lyons, 1988).

Reading Recovery is an early intervention tutoring program for young readers who are experiencing difficulty in their first year of reading instruction. RR serves the lowest achieving readers (lowest 20%) in first-grade classes by providing the children with supplemental tutoring in addition to their regular reading classes. Children participating in RR receive daily one-to-one 30-minute lessons for 12-20 weeks with a teacher trained in the RR method. The lessons consist of a variety of experiences designed to help children develop effective strategies for reading and writing. When the student reaches a stage at which he or she is able to read at or above the average class level and can continue to read without later remedial help, the student is discontinued from the program. Students who are not discontinued are excluded

from the program after 60 lessons and may be placed either in special education classes or in some other form of remedial education.

RR tutors are certified teachers, who receive an additional year's training in Reading Recovery tutoring. The tutoring model emphasizes "learning to read by reading" (Pinnell, 1989; Pinnell, DeFord, & Lyons, 1988). The lessons are one-to-one tutorial sessions that include reading known stories, reading a story that was read once the day before, writing a story, working with a cut-up sentence, and reading a new book. RR does not have a prescribed set of books that each child must read; teachers involved in the program use a variety of readily available books that the children select as they work on the various components of RR. For the first few tutoring sessions, the teacher and student "roam around the known," reading and writing together in an unstructured, supportive fashion, to build a positive relationship and to give the teacher a broader knowledge of the child and his or her reading skills. After this, the teachers begin to use a structured sequence of activities which include rereading familiar books, analysis of student progress, reading and writing of short messages, and reading new books.

Although RR was not originally created for Latino or LEP students, the program is frequently used with such students either in Spanish or English depending on the language of instruction in the students' regular reading classes. RR is currently used in states that have high Latino populations, such as Arizona, California, and Texas, and has been evaluated with Latino students.

Descubriendo La Lectura (DLL) is a Spanish adaptation of Reading Recovery (RR), developed and studied in Tucson, Arizona. It is equivalent in all major program aspects to the original program. Students in Spanish bilingual classes whose reading scores fall at the bottom 20% in the first grade are placed in DLL.

The Ohio State group has conducted three longitudinal studies comparing English Reading Recovery to traditional Title I pull-out or in-class methods. The first (pilot) study (Huck & Pinnell, 1986; Pinnell, 1988) of RR involved first grade students from six inner-city Columbus, Ohio schools and six matched comparison classes. The lowest 20% of students in each class served as the experimental and control group, respectively. The second longitudinal study (Pinnell, Short, Lyons, & Young, 1986; DeFord, Pinnell, Lyons, & Young, 1988) involved 32 teachers in 12 schools in Columbus. Again, students in the lowest 20% of their classes were randomly assigned to Reading Recovery or control conditions. Results showed that Reading Recovery students substantially outperformed control students on almost all measures in a series of assessments developed by the program except tests of letter

identification and word recognition, both of which had ceiling effects. With the exception of these, the effects ranged from +.57 to +.72.

An oral reading measure called Text Reading Level was given at the end of first, second, and third grades. On this test, students were asked to read books that got progressively more difficult. The results of this study for Text Reading Level at the end of first grade showed substantial positive effects for both the pilot cohort and the second cohort (ES=+.72 and +.78 respectively). On a follow-up assessment at the end of second grade, the effects diminished (ES=+.29 and +.46 respectively). At the end of third grade, the effect sizes had diminished even further (ES=+.14 and +.25, respectively). The raw experimental-control differences remained about the same over the three-year period, but due to the increasing standard deviations the effect sizes diminished (Wasik & Slavin, 1993).

A third study of Reading Recovery involved schools in ten districts throughout the state of Ohio (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994). This study compared Reading Recovery to three program variations and a control group. On mid-year assessments, Reading Recovery students scored better than control students and better than an RR variation that involved a shorter training period, a group (not one-to-one) version of RR, and an alternative tutoring model. A Gates-McGinitie given in May of first grade showed small and nonsignificant effects, but the following fall RR students scored significantly higher than controls on both Text Reading Level and a dictation test. None of the RR variations were significantly higher than control groups on these measures.

Studies of Reading Recovery conducted by researchers who are not associated with the program find patterns of results similar to those found by the Ohio State researchers. Tests given immediately after the Reading Recovery intervention show substantial positive effects of the program. These effects diminish in size in years after first grade, although some difference is usually still detectable in third grade (Baenen, Bernhole, Dulaney, Banks, & Willoughby, 1995; Center, Wheldall, Freeman, Outhred, & McNaught, 1995; Shanahan & Barr, 1995).

An evaluation of *Descubriendo La Lectura* (DLL) was conducted by Escamilla (1994) in Tucson. The experiment compared 23 DLL students to 23 matched comparison students in a school that did not have DLL. In both cases, students were identified as being in the lowest 20% of their classes based on individually administered tests and teacher judgment.

The outcomes of DLL on Spanish reading measures given at the end of first grade were extremely positive. On six scales of a Spanish Observation Survey adapted from the measures used in evaluations of the English Reading Recovery program, DLL students started out below

controls and ended the year substantially ahead of them, with effect sizes (adjusted for pretest differences) ranging from +.97 to +1.71. These scores were also compared to those of a random sample of all students, most of whom were not having reading difficulties, and the DLL students performed above the level of the classes as a whole on all scales. Students were also pre- and posttested on a standardized test, the Aprenda Spanish Achievement Test. On a total reading score, DLL students increased from the 28th to the 41st percentile. Control students increased from the 26th to the 28th percentile, while classes as a whole decreased from the 35th to the 31st percentile.

A much larger study of DLL was carried out in California by Kelly, Gomez-Valdez, Klein, and Neal (1995). This study did not have a low-achieving control group, but did show both that "discontinuation rates" (an indicator of successful program completion) were similar in DLL and in English Reading Recovery, and that end-of-first-grade reading performance of children who participated in DLL was not far below the level of children in general in their schools (most of whom were not at risk for reading failure).

Reading Recovery is very widely used, and has regional training centers in 18 states, mostly at universities. The training or residency period for RR lasts one academic year. Teachers then return to their individual sites to implement the program, staying in contact with the RR network through conferences, newsletters, and other network activities. An estimated 80,000 children in 48 states are being served in the 1994-1995 academic year by Reading Recovery educators.

Helping One Student To Succeed

Helping One Student To Succeed (HOSTS) (HOSTS Corporation, 1994; Gallegos, 1995) is a model that helps schools create tutoring programs for at-risk students using a mentoring approach. HOSTS schools provide one-to-one, usually after-school tutorial services to Title I students in elementary through high school who are performing below the 30th percentile. This includes LEP students and those who have been retained or are in special education. HOSTS trains community volunteers from businesses and the community, as well as peers and cross-age mentors, to serve as tutors. HOSTS was not created specifically to serve Latino students, but some of the school districts where HOSTS has been most successful have large numbers of Latino students, such as Pasadena, California and Houston, Texas.

HOSTS helps school staffs choose curriculum materials that are especially tailored to the individual needs of the child receiving services and aligned with what is being taught in the regular classroom. Schools involved in HOSTS have access to thousands of learning materials

that have been designed to help the targeted population. The mentor/tutor follows a carefully designed lesson plan generated by the Title I teacher from a comprehensive database that aligns the curriculum of the schools to local objectives or state frameworks.

HOSTS evaluations have not included pre-post, experimental/control group studies. They have measured their student participants' success by looking at NCE scores, NCE gains, and the number of students who pass at grade level.

In a multi-state study of HOSTS done for Title I national validation (HOSTS, 1994), the students in grades one, two, and three made substantial NCE spring to spring gains (15, 25, and 25 respectively), while the students in other grades also made significant NCE gains. In a spring to spring California evaluation that had a 95% population of Hispanic students, students in second, third, and fifth grades had NCE gains of 11.4, 9.5, and 9.9 respectively. These NCE gains exceeded those of the school and the state.

Since its inception in Vancouver, Washington, in 1972, HOSTS has involved over 150,000 students and 100,000 mentors in more than 400 programs nationwide.

Title VII Academic Excellence Award Winning Programs

In this section, we briefly describe of the Title VII Academic Excellence Award winning programs for the year 1995. These programs do not meet our evaluation criteria because of lack of control groups, but they show promise and are worth mentioning as alternatives for schools serving many English language learners. All of them have staff development programs capable of working with schools nationally or in their regions. Some of the programs exist as either bilingual or ESL programs, depending on the needs of the district.

Project ACHIEVE (1994) is an elementary school (grades 1-6) ESL program developed in Urbana, Illinois that provides instruction for students in science, language arts, social studies, and reading. Students entering the district with very little or no English language skills are identified, tested, and assigned to daily two-hour classes where English is taught using a whole language approach. Students in the first, second, and third grades receive reading instruction in an ESL room when the mainstream teacher is working with reading groups. The fourth, fifth, and sixth grade ESL students receive science and social studies instruction in the ESL room while their peers receive science and social studies instruction in the regular

classroom. The ESL science program uses many hands-on experiences and cooperative learning groups.

The Alaska Writing Project (1994) is an ESL program developed in Fairbanks, Alaska, that provides instruction in science, language arts, and social studies to elementary and secondary school students (K-12). It provides a writing process emphasizing computer applications, using a sheltered English approach to writing across the curriculum. Students engaged in the writing process learn to plan, draft, revise, proofread, and publish stories, newspapers, letters, and reports.

Project BICOMP (1994) is a bilingual and ESL program designed in West Sacramento, California, that provides instruction in science and language arts. Project BICOMP functions as an academic preparation and enrichment program designed to promote acquisition of English by language minority students using science-based interdisciplinary instructional modules that integrate science with art, literature, mathematics, and computer instruction using a sheltered constructivist approach.

Project GLAD (1994) is an ESL and bilingual instruction program in Fountain Valley, California, that provides instruction in science, language arts, and social studies. Teachers involved in Project GLAD are trained to modify delivery of instruction to students to promote language acquisition and cultural sensitivity using a whole language approach.

Project PIAGET (1994) is a preschool and kindergarten program in Bethlehem, Pennsylvania, that provides both ESL and bilingual instruction services to students in the areas of science, math, language arts, and social studies using a cooperative approach to learning. The program provides students with opportunities to improve their receptive language and reading readiness. Project PIAGET also has a parent training component.

Project CELL (1994) is a diagnostic/prescriptive ESL language arts program designed for elementary school children (grades 1-6) in Irvine, California. The main goal of CELL is to improve the English reading and language arts skills of students who are in mainstream classes, but who need independent and individualized instruction to improve in English. CELL uses a curriculum that incorporates computer assisted instruction and allows the students to progress at an individualized, accelerated pace. After the classroom teacher identifies a student's needs, a lab technician prescribes appropriate software for the identified child to use for 30 minutes, four days per week.

Project CEMI (1994) is an elementary school (K-3) transitional bilingual education language arts program that provides teachers with professional development to help improve

English skills among limited English proficient students, using computer-assisted instruction. Project CEMI provides students with a two-stage computer literacy program that allows them to acquire language arts skills using programming languages such as LOGO™. It was originally developed in Guarbo, Puerto Rico.

Project GOTCHA is an elementary school (K-6) ESL language arts program designed to serve students who meet the criteria for being included in gifted and talented or creative programs, but are English language learners. The program is designed to develop critical skills and expression, using media such as art, music, and dance.

Project MORE (1994) is a transitional bilingual preschool and elementary school language arts program developed in Los Angeles that provides instruction in the content areas in students' primary languages using a natural language approach. As the students begin to transition more and more to English, they progressively acquire competence in English using a sheltered English approach.

Project SLICE (1994) is a two-way bilingual education program for children in grades K-6, created in Fremont, California. Students involved in Project SLICE receive at least one period of reading in their primary language; then, as they become proficient in the second language, they receive one period of reading in that language also. English-speaking students are transitioned into Spanish in the same way as Spanish-dominant students are transitioned into English. In contrast to practices in transitional bilingual programs, students are usually not transitioned out of the program even after they become proficient in English, but remain in Project SLICE through the sixth grade, receiving education in both languages.

Project PUENTE Outreach (1994) is an elementary school (K-6) transitional bilingual education program developed in Healdsburg, California, that provides language arts instruction to English language learners using a cooperative learning approach. Students involved in Project PUENTE are grouped heterogeneously in classrooms, where they receive language arts instruction initially in Spanish. The program also uses a discovery method in science.

Project SEA (1994) is an elementary school bilingual and ESL program developed in Glendale, California, for children in grades 4-6. Using cooperative learning, Project SEA provides instruction to students who require language and concept development support in language arts, social studies, and science.

Project TALK (1994) is an ESL program developed in Aurora, Colorado, for children in grades K-6. It provides native language tutoring to English language learners in content area

subjects, using a diagnostic prescriptive approach. The Project TALK tutor provides supplemental support in the content area subjects, and helps the students to acquire English-language skills. Students involved in TALK actively participate in an integrated curriculum in regular classes.

Project TWO-WAY (1994) is an elementary school two-way developmental program that provides bilingual instruction to children in grades K-6 in science, mathematics, language arts, and social studies, with the ultimate goal of developing literacy in two languages and cross-cultural understanding. Project TWO-WAY differs from many of the other programs serving language minority students in that, as a two-way developmental program, whatever the Spanish-speaking children do in their classes is mirrored with the English-speaking students. English-speaking students also gain proficiency in Spanish. Project TWO-WAY uses cooperative learning, a natural approach to second language acquisition, sheltered instruction, and activity-based group instruction.

Categorization of Programs Reviewed

As noted earlier, an ideal program for this review would be one that was specifically designed for Latino students (and had Spanish materials available), had been rigorously evaluated many times in elementary or middle schools serving many Latino students, and had been extensively replicated in such schools. However, few programs would meet all of these criteria. Table 1 summarizes the degree to which each of the programs reviewed met the various inclusion criteria. The table is only a summary; see the program reviews for more detail on the characteristics, evaluation evidence, and replicability of each program.

Table 1. Categorization of Programs Reviewed

Program Name	Grades Served	Spanish Bilingual Focus	Meets Evaluation Criteria for Achievement	Evaluated with Latinos	Designed Specifically for Latinos	Widely Replicated
Schoolwide Reform Programs						
SFA/*Lee Conmigo*	K-6	yes	yes	yes	yes	yes
Accelerated Schools	K-6	no	partially	yes	no	yes
School Development Program	K-6	no	partially	yes	no	yes
Consistency Management & Cooperative Discipline/ Disciplina Consistente y Cooperativa	K-6	yes	yes	yes	yes	no
Goldenberg & Sullivan	K-6	no	yes	yes	yes	no
Cooperative Learning Methods						
CIRC/BCIRC	2-8	yes	yes	yes	yes	yes
Complex Instruction/Finding Out/Descubrimiento	1-6	yes	partially	yes	yes	yes
STAD/TGT	2-12	no	yes	yes	no	yes
Jigsaw	2-12	no	partially	yes	no	yes
Learning Together	K-12	no	yes	yes	no	yes
Reading/Writing/Language Arts Programs						
DISTAR/Reading Mastery	1-3	no	yes	yes	no	yes
ECRI	1-10	no	yes	yes	no	yes
Reciprocal Teaching	1-8	no	yes	yes	no	yes
Profile Approach to Writing (PAW)	3-12	no	yes	yes	no	yes
Multicultural Reading and Thinking (McRAT)	3-8	no	yes	no	no	yes
Mathematics Programs						
Comprehensive School Mathematics Program	K-6	no	yes	yes	no	yes
Cognitively Guided Instruction	1	no	yes	yes	no	yes
Project SEED	3-8	no	yes	yes	no	yes
Skills Reinforcement Project	3-8	no	yes	yes	no	yes
Maneuvers With Mathematics	5-8	no	yes	yes	no	yes

Table 1. (continued)

Program Name	Grades Served	Spanish Bilingual Focus	Meets Evaluation Criteria for Achievement	Evaluated with Latinos	Designed Specifically for Latinos	Widely Replicated
Preschool Programs						
Perry Preschool/High Scope	preschool	no	yes	no	no	yes
EISS	preschool-1	no	yes	yes	no	yes
Tutoring Programs						
Reading Recovery/*Descubriendo La Lectura*	1	yes	yes	yes	yes	yes
HOSTS	1-6	no	yes	yes	no	yes
Title VII Academic Excellence Award Programs						
ACHIEVE	1-6	yes	no	yes	yes	no
ALASKA	K-12	yes	no	yes	yes	no
BICOMP	K-3	yes	no	yes	yes	no
CELL	1-6	yes	no	yes	yes	no
CEMI	K-3	yes	no	yes	yes	no
GLAD	1-6	yes	no	yes	yes	no
GOTCHA	K-6	yes	no	yes	yes	no
MORE	Pre-K-3	yes	no	yes	yes	no
PIAGET	Pre-K	yes	no	yes	yes	no
PUENTE	K-6	yes	no	yes	yes	no
SEA	4-6	yes	no	yes	yes	no
SLICE	K-3	yes	no	yes	yes	no
TALK	K-6	yes	no	yes	yes	no
TWO-WAY	K-6	yes	no	yes	yes	no

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What Factors Contribute to Program Effectiveness?

The programs reviewed in this report vary in focus, research designs, measures, and other aspects, and often serve different populations. In addition, we focused on locating programs that have evidence of effectiveness. Those we did not include typically lacked adequate research designs; rarely do we have evidence that a given program was *not* effective, as such evidence is seldom reported. For these reasons we cannot definitively compare effective and ineffective programs and reach firm conclusions about what factors contribute to program success. However, in the course of reviewing hundreds of articles for this and other reports on effective programs for students placed at risk, we have identified a set of conditions that are usually present in programs that work. These are discussed below.

1. Effective programs have clear goals, emphasize methods and materials linked to those goals, and constantly assess students' progress toward the goals.

There is no magic in educational innovation. Programs that work almost invariably have a small set of very well-specified goals (e.g., raise mathematics achievement, improve creative writing skills), a clear set of procedures and materials linked to those goals, and frequent assessments that indicate whether or not students are reaching the goals. Effective programs leave little to chance. They incorporate many elements, such as research-based curricula, instructional methods, classroom management methods, assessments, and means of helping students who are struggling, all of which are tied in a coordinated fashion to the instructional goals.

Programs almost always have their strongest impacts on the objectives they emphasize. For example, programs emphasizing complex problem solving in mathematics report stronger impacts on problem solving than on computations; programs emphasizing thinking skills tend to show effects on thinking skills, not reading comprehension. Again, there is no magic in educational innovation. Interventions that are not closely linked to desired outcomes rarely affect these outcomes.

2. Effective and replicable programs have well-specified components, materials, and professional development procedures.

There is a belief in many quarters that each school with the participation of all staff, must develop or co-develop its own reform model, that externally developed programs cannot be successfully replicated in schools that had no hand in developing them. This belief is often traced to the influential Rand (1978) Change Agent Study, although that study's principal

author, Milbrey McLaughlin (1990), later denied that the Change Agent Study in fact implied that externally developed programs could not work in new schools. Over time, evidence has mounted that reform models that ask teachers to develop their own materials and approaches are rarely implemented at all (see, for example, Elmore, 1996; Muncey & McQuillan, 1993). Studies of alternative programs implemented under similar conditions find that the more highly structured and focused programs that provide specific materials and training are more likely to be implemented and effective than are less well-specified models (e.g., Bodilly, 1996; Herman & Stringfield, 1995).

Within the present review, the same observations hold true. Although there are examples of success in models lacking clear structure, the programs with the most consistent positive effects with Latino as well as non-Latino students are those that have definite procedures and materials used in all participating schools. School staffs may be asked to adapt materials to their own needs, and most successful programs have some buy-in procedure to ensure that participating teachers or whole school staffs have made an informed and uncoerced choice to use a given program. The provision of well-specified methods and materials clearly contributes to both the effectiveness of programs and to the ease of replicating programs in additional schools and producing positive outcomes beyond initial pilots.

3. Effective programs provide extensive professional development.

A characteristic shared by almost all of the effective programs we identified is the provision of extensive professional development and follow-up technical assistance. Few if any provide the classic half-day, one-time workshops that constitute the great majority of "inservice" programs, especially those usually provided with textbook adoptions. On the contrary, most of the successful programs we identified provide many days of inservice followed by in-class technical assistance to give teachers detailed feedback on their program implementations. Typically, teachers work with each other and with peer or expert coaches to discuss, assess, and refine their implementations. The training provided is rarely on generic strategies from which teachers pick a few ideas to add to their bags of tricks. Instead, training focuses on comprehensive strategies that replace, not just supplement, teachers' current strategies.

4. Effective programs are disseminated by organizations that focus on the quality of implementation.

The programs identified in this review that have been associated with consistent positive effects in many settings tend to be ones that are developed and disseminated by active,

well-structured organizations that concentrate efforts on ensuring the quality of program implementation in all schools. These organizations, often based in universities or school systems, provide training and materials and typically create support networks among program users. For example, many of the organizations have national and/or regional conferences to keep up participants' skills and commitment, distribute newsletters and other updates, and work to ensure that schools claiming to use the program are in fact doing so with adequate preparation and integrity. Few of the programs are distributed by commercial publishers; one exception, DISTAR/Reading Mastery, maintains a training organization, headquartered at the University of Oregon, to provide supplemental training beyond that provided by the publisher.

Conclusion

The research presented in this review, plus that reported in the scores of programs that did not meet the standards for inclusion applied here, supports two seemingly inconsistent conclusions. First, there is a broad range of replicable programs from which elementary and middle schools can choose to meet the needs of their Latino students. Most of these are backed up by networks of trainers and experienced users, materials, manuals, videos, and other supports, and some have convincing evidence of effectiveness. Anyone who believes that the often dismal performance of many Latino students is inevitable must confront the data from these programs. Anyone who believes that every school must reinvent its own path to reform must confront the evidence of replicability presented by so many programs. Some of the programs (such as Accelerated Schools, the School Development Project, and the Goldenberg and Sullivan program) are designed to help schools develop their own approaches, but this is not the same as asking schools without the support of these experienced and skillful networks to reinvent their practices. Every program requires adaptation to the circumstances, needs, and resources of every school. It would be foolish for schools to ignore the rich and varied set of alternatives available to them to enhance the learning of their Latino and non-Latino students.

Yet this same review also shows the enormous gaps in our knowledge base. Hundreds of articles and dozens of studies have debated the question of native language vs. English reading instruction for English language learners, but few studies have compared alternative approaches to instruction in Spanish or English for Latino children and even fewer studies have examined alternative methods of facilitating transition from Spanish to English reading, whenever that transition takes place. Studies of replicable, effective practices for students in general are few, but studies of such methods specifically designed for Latino or English language learners are even fewer. Not one of the programs that met the rather liberal standards applied in this review would be out of place in a review of research on effective practices for

students in general. Five of the six programs that were specifically designed for Latino and English language learners, *Lee Conmigo*, BCIRC, Finding Out/*Descubrimiento, Descubriendo La Lectura*, and *Disciplina Consistente y Cooperativa* are all applications of programs not specifically designed for Latino students: Success for All, CIRC, Complex Instruction, Reading Recovery, and Consistency Management and Cooperative Discipline respectively.

Even when programs do present convincing evidence of effectiveness, the measures used often give an advantage to the experimental group, as they often emphasize skills or concepts more likely to be taught in the experimental group. This may be why we found more effective programs for teaching creative writing, mathematics problem solving, and critical thinking than we did programs for teaching reading, language arts, or mathematics computations. Traditional control groups are sure to be emphasizing the latter subjects — to do better on them than the control group, an innovative method must be a better way to teach the same material. In contrast, a program teaching creative writing, problem solving, or critical thinking may look effective simply because the control teachers are spending little time on these topics.

Although the number of proven programs and the quality of evidence for students is not always what we'd wish for, there are almost certainly many more effective programs in existence than those we have identified. Programs were seldom rejected from this review because we had evidence that they were *not* effective; instead, most simply lacked even rudimentary evidence to establish their effectiveness. Better evaluations of promising, attractive programs for Latino and other students would probably find many more effective and replicable models to add to our list.

The message of this review is one of hope and urgency. Schools can do a much better job of educating Latino students, using methods and materials that are readily available. There are approaches that are effective and appropriate for bilingual classes, for ESL classes, and for English-dominant Latino students. The existence of these approaches demonstrates that the low achievement of so many Latino students is not inevitable. We need not wait for social or political transformation or conclusive resolution of the question of language of instruction to dramatically improve educational outcomes for Latino students.

Even as the use of bilingual instruction is being debated on the political level, we must move toward a day when schools have available a wide range of replicable programs known to significantly accelerate the achievement of Latino children in Spanish or English, or both. Otherwise, resolution of the debate will mean little. This report takes one step in this direction by summarizing the best evidence on the best programs we have available today, but there is much more remaining to be done.

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Appendix

Contacts for Information on Programs Reviewed

Accelerated Schools
Claudette Spriggs
National Center for the Accelerated Schools Project
Stanford University
CERAS 109
Stanford, CA 94305-3084
415-725-7158 or 415-725-1676

Bilingual Cooperative Integrated Reading and Composition (BCIRC)
Margarita Calderón
3001 Cabot Place
El Paso, TX 79935
915-595-5971

Cognitively Guided Instruction (CGI)
Elizabeth Fennema or Thomas Carpenter
University of Wisconsin, Madison
Wisconsin Center for Education Research
1025 West Johnson Street
Madison, WI 53706
608-263-4265

Complex Instruction/Finding Out/Descubrimiento
Elizabeth G. Cohen
Stanford University, School of Education
Stanford, CA 94305
415-723-4661

Comprehensive School Mathematics Program (CSMP)
Clare Heidema, Director
2550 South Parker Road, Suite 500
Aurora, CO 80014
303-337-0990/Voice mail 303-743-5520
Fax: 303-337-3005

Consistency Management and Cooperative Discipline (CMCD)
H. Jerome Freiberg
University of Houston
College of Education
Houston, TX 77204-5872
713-743-8663

Direct Instruction/DISTAR/Reading Mastery
Association for Direct Instruction
805 Lincoln
Eugene, OR 97401
541-485-1293

Early Intervention for School Success
Dean Hiser
200 Calmus Drive
P.O. Box 9050
Costa Mesa, CA 92628-9050
714-900-4125

Exemplary Center for Reading Instruction (ECRI)
Ethna R. Reid
Reid Foundation
3310 South 2700 East
Salt Lake City, UT 84109
801-486-5083 or 801-278-2334
Fax: 801-485-0561

Goldenberg and Sullivan
Claude Goldenberg
Dept. of Teacher Education
CSU Long Beach
1250 Bellflower Blvd.
Long Beach, CA 90840
310-985-5733
Fax: 310-985-1543

Group Investigation
Mark Brubacher
416-394-3402
Kemp Rickett
416-393-9565

Helping One Student to Succeed (HOSTS)
William E. Gibbons, Chairman
8000 N.E. Parkway Drive, Suite 201
Vancouver, WA 98662-6459
260-1995 or 800-833-4678
Fax: 206-260-1783

Jigsaw
Spencer Kagan
Resources for Teachers
27134 A Paseo Espada #202
San Juan, Capistrano, CA 92675
1-800-WEE-COOP

Learning Together
Roger T. Johnson and David W. Johnson
The Cooperative Learning Center
60 Peik Hall, University of Minnesota
Minneapolis, MN 55455
612-624-7031

Maneuvers With Mathematics (MWM)
David A. Page or Kathryn B. Chval
The University of Illinois at Chicago
851 Morgan Street (m/c 249) SEO 1309
Chicago, IL 60607-7045
312-996-8708

Multicultural Reading and Thinking (McRAT)
Janita Hoskyn, National Consultant
1019 Ronwood Drive
Little Rock, AR 72227
501-225-5809
Fax: 501-455-4137

Profile Approach to Writing (PAW)
Jane B. Hughey or Dixie Copeland
1701 Southwest Parkway, Suite 102
College Station, TX 77840
409-764-9765 Phone or Fax

Project ACHIEVE
Dr. Mary Fritz
Urbana School District 116
1108 W. Fairview
Urbana, Illinois 61801
800-ESL-PROG (375-7746)
Fax: 217-344-5160

Project ALASKA (Alaska Writing Program)
Dr. Nikin McCurry
Yukon Koyukuk School District
Box 80210
Fairbanks, AK 99708
800-348-1335
Fax 907-474-0657

Project BICOMP
The Bilingual Integrated Curriculum Project
Lorie Hammond
Washington Unified School District
930 West Acres Road
West Sacramento, CA 95691
916-257-2237 or 916-371-7720
Fax: 916-371-8319

Project CELL
Computer Education for Language Learning
Celia Edmundson
Irvine Unified School District
5050 Barranca Parkway
Irvine, CA 92714
800-237-CELL or 714-733-9391
Fax: 714-733-9391

Project CEMI
Computer Education for Multilingual Instruction
Iris N. Dias
Turbano University-Department of Education
Box 3030, University Station
Guarbo, Puerto Rico 00778
809-734-7979, Ext 4940
Fax: 809-743-7979, Ext 4944

Project GLAD
Guided Language Acquisition Design
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Project GOTCHA
Galaxies of Thinking and Creative Heights
of Achievement
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Fort Lauderdale, FL 33301
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Project MORE
Model Organization Results of Eastman
Diana Hernandez
Los Angeles Unified School District
Language Acquisition and
Bilingual Development Branch
1320 W. Third Street, Room 131
Los Angeles, CA 90017

Project PIAGET
Promoting Intellectual Adaptation
Given Experiential Transforming
Kriste Falla-Serfass
The Bethlehem Area School District
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Bethlehem, PA 18017
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Project PIAGET
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The Pennsylvania State University
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Project PUENTE Outreach: A Bridge
Between Communities
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Project SEED (Berkeley, California)
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Project SEED (Dallas, Texas)
Hamid Ebrahimi, National Director
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Project SLICE
Systematic Linking and Integrating
of Curricula for Excellence
Dr. Beverly R. Taub
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Office of Federal and State Projects
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Project TALK
Tutors Assisting with Language and Knowledge
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Aurora Public Schools
Bilingual Education Center
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Project TWO-WAY
TWO-WAY Bilingual Immersion
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River Glen Elementary School
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Fax: 408-298-8377

Reading Recovery/Descubriendo La Lectura
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Dr. Diane E. DeFord
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Reciprocal Teaching
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School Development Program (SDP)
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Sheltered English Approach (SEA)
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Skills Reinforcement Project (SRP)
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Student Teams-Achievement Divisions (STAD)
and Teams-Games-Tournament (TGT)
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